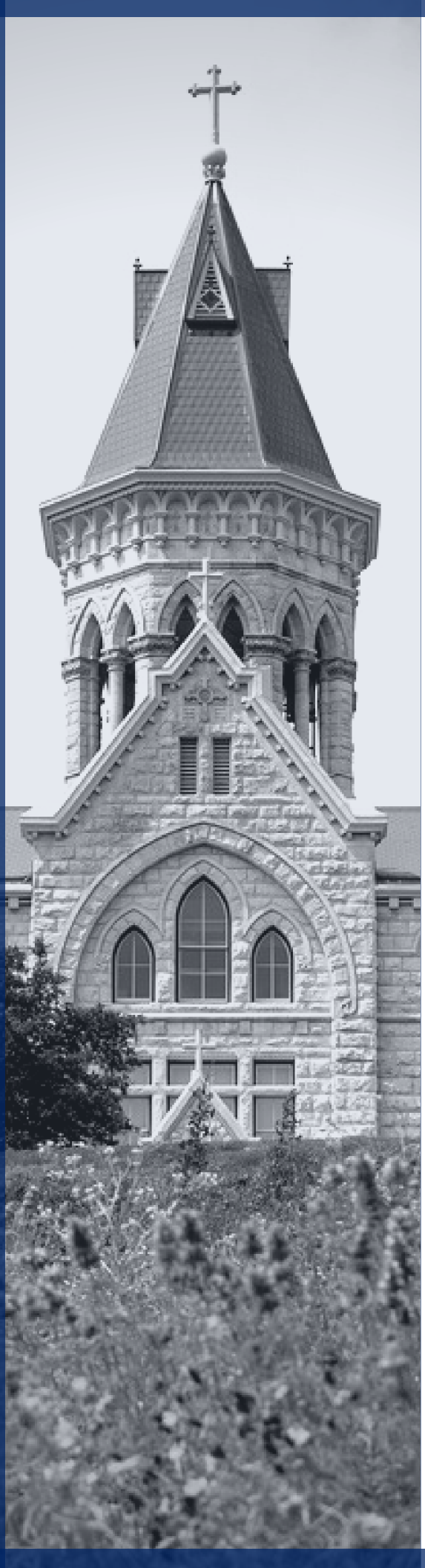


ST. EDWARD'S UNIVERSITY

SYMPOSIUM ON UNDERGRADUATE RESEARCH AND CREATIVE EXPRESSION

SOURCE

SOURCE

2021

PROGRAM

PROGRAM SECTIONS

SOURCE

LETTER FROM THE INTERN

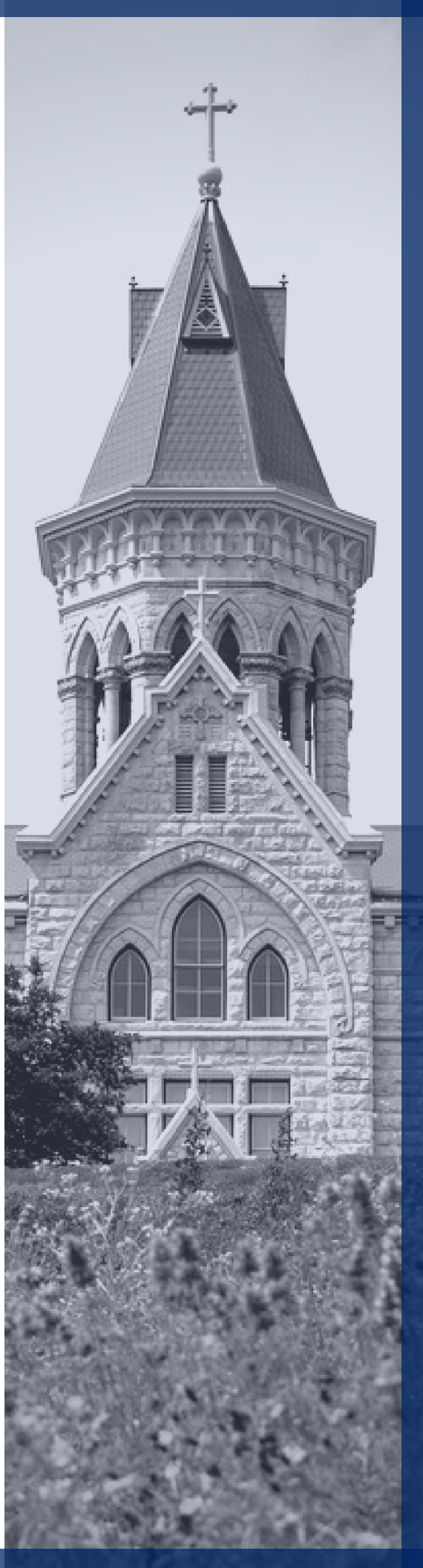
In Spring 2020, SOURCE was disrupted by the quick pivot to online learning we all experienced because of the COVID-19 pandemic. There was so much unfolding and so many unknowns that the committee assembled **conference proceedings** for that event—a publication sharing students' original research and posters. This year, the committee decided to host a fully virtual event, using Zoom, but we also wanted to retain some in-person features that regular attendees might recognize. For example, the oral presentations will take place in three separate Zoom room, mirroring our preferred locations of Mabee A, B, and C in Ragsdale. The poster sessions can't include a buffet lunch, but they can still occur over the lunch hour.

This program is organized by the schools each SOURCE participant represents. Organized alphabetically, each section includes information about the student participant and a full abstract for the presentation. You will also find information about the gender pronouns each student presenter uses; we would encourage audience members to share the pronouns they use during Q&A sessions.

We hope you enjoy learning from these undergraduate scholars, as they share their insights and findings with the larger SEU community.

INDIRA AZIZ

SOURCE Intern



CONTENTS

Natural Sciences

SARAH AVANT

Biology Major
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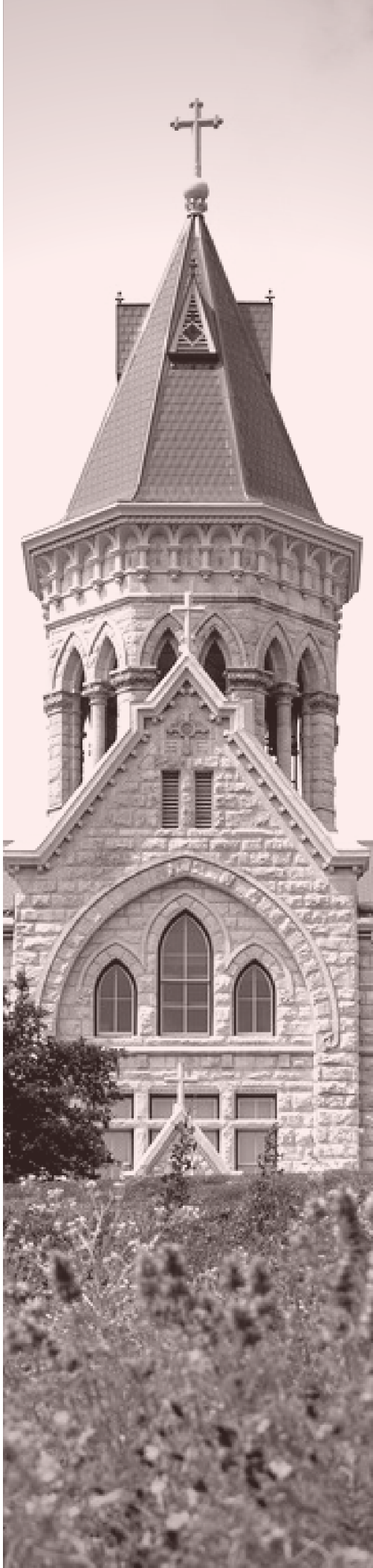
ANDREA HOLGADO

FACULTY

Professor of Biological Sciences

INVESTIGATING THE EFFECTS OF TEMPERATURE ON THE REGULATION OF THE EXPRESSION OF NEURONAL UNC-33 IN C. ELEGANS

Jeopardized genetic and environmental factors, such as the disruption to the mTOR signaling pathway and prenatal stress, are hypothesized to lead to the development of schizophrenia. Researchers Lee and colleagues observed decreased levels of DPYSL2 in the prefrontal cortex and hippocampus of rats exposed to prenatal stress. DPYSL2 is important for axonal outgrowth, cell differentiation, and promoting proper microtubule assembly in humans. The C. elegans homolog of DPYSL2, UNC-33, is also important for proper axonal formation and elongation. The purpose of this study is to monitor the effects of environmental stress, using the stressor of high temperature, on the endogenous levels UNC-33 proteins. Preliminary studies from our laboratory have shown that neuronal GFP expression driven by the unc-33 promoter decreases gradually as temperature is increased. To study the effects of high temperature in the endogenous levels of neuronal UNC-33 proteins, we will incubate C. elegans hermaphrodites at 16˚C and 25˚C until they reached an L2/L3 stage. Using confocal microscopy, the head of C. elegans hermaphrodites will be imaged to determine the levels of endogenous UNC-33 proteins in two cell types, neurons and glia cells. We predict that quantification of twenty nematodes per condition will validate prior findings from our labs obtained using a transcriptional reporter (punc-33::GFP). This study provides insight into the role that high temperature has on regulating the expression of neuronal unc-33, one of the molecular players shown to be negatively impacted by prenatal stress in rats and by polymorphic variations in patients suffering from Schizophrenia.



GLENN BLADE

Biochemistry Major

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SANTIAGO TOLEDO

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SYNTHESIS AND OXIDATIVE REACTIVITY OF A MN(II) ACTIVE SITE MODEL OF THE MAMMALIAN ENZYME MANGANESE ACIREDUCTONE DIOXYGENASE (MN-ARD)

Acireductone dioxygenase (ARD) is a metalloenzyme that plays a role in the ubiquitous methionine salvage pathway (MSP) across plants, animals, and bacteria. ARD catalyzes the penultimate step in the MSP and plays a role in regulation of polyamines, carbon monoxide, and the essential amino acid methionine. Because of this regulatory role, ARD has been linked to tumor formation, carcinogenesis, and hepatitis C, making it an enzyme of particular interest. Furthermore, ARD also performs dual chemistry based solely on the metal ion bound to its active site, leading to both on-pathway and off-pathway reactions that result in different products. The off-pathway reaction is of note due to the production of carbon monoxide, a known anti-apoptotic cell signaling molecule. While in bacteria, the off-pathway reaction is performed by Ni-ARD, it is known that Mn and Co bound ARD are capable of performing the off-pathway reaction in mammalian systems. In order to investigate the dual chemistry of ARD and elucidate the structure-function relationship of a human relevant metal in ARD specifically, a small molecular manganese complex was synthesized using a pyridine based, Schiff-base, N4O chelating ligand. Characterization of this complex and its derivatives will be presented. Preliminary reactivity studies with the resulting Mn(II) complex when exposed to oxygen and in the presence of substrate analogues will be discussed. This oxidative chemistry potentially holds biological implications for understanding the mechanism of Mn-ARD, as well as other important Mn containing enzymes like oxalate oxidase, quercetin dioxygenase, and manganese superoxide dismutase.

RACHELLE CARDOZA

Kinesiology Major

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KRISTY BALLARD

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Associate Professor of Kinesiology

THE PERSPECTIVE OF PHYSICAL THERAPISTS IN CARING FOR ALZHEIMER PATIENTS WITH BPSD

Physical therapists are prominently known for delivering exercise treatments as their primary occupation. This study will investigate the views of licensed physical therapists (PT) regarding their role in managing the physical health of those with Alzheimer's disease (AD). More precisely, to see if physical therapists clearly understand this mental disorder, how they might help if there needs to be an increased awareness for this occupation in the mental health area, and finally, what were common patient behaviors observed in rehabilitation. This study investigates if physical therapists are able to identify behaviors of patients and distinguish which treatment methods are more commonly successful. This research has the potential to provide insights into how to achieve practical benefits to a population of patients that are often vulnerable and neglected. A questionnaire was sent to PTs in the Central Texas area. Questions included the physical therapists' background and preparation for their occupation, the socio-demographic characteristics of the healthcare professionals, and their thoughts and role in treating and managing someone with Alzheimer's.

EDUARDO CARRILLO

WITH MELISSA LOPEZ

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MUTATIONS IN MICROTUBULE ASSOCIATED PROTEIN UNC-33 LEAD TO DEFECTS IN AUTOPHAGOSOME MATURATION IN C. ELEGANS, CONNECTING AUTOPHAGY AND NEURODEGENERATION

The accumulation of misfolded proteins is a shared pathology among neurodegenerative disorders such as Parkinson's and Alzheimer's. These defective proteins are degraded in a multi-step process known as autophagy. During this process, the defective proteins are first sequestered within an autophagosome. The autophagosome is then transported along microtubules from the synapses to the cell body. Microtubules and their microtubule-associated proteins (MAPs) such as CRMP2/UNC-33 are key elements supporting the transport of autophagosomes. Studies indicate that the accumulation of these autophagic vacuoles could contribute to the development of neurodegenerative diseases. Based on this information and considering that autophagy is dependent on the trafficking of autophagosomes to the cell body through motor proteins, our lab hypothesizes that trafficking of synaptic autophagosomes may be defective in unc-33 mutants. To test this hypothesis, we monitored the trafficking of double fluorescently tagged autophagosomes (dFP) in the AIY neuron using confocal microscopy. Autophagy flux was also quantified under autophagy-inducing conditions through western blotting techniques. To further understand the mechanisms by which CRMP-2/UNC-33 regulates autophagy, we analyzed autophagosome maturation during trafficking to the cell body. Images of 25 animals per strain, per condition, were obtained and quantified after randomization. Preliminary data of dFP in autophagic vacuoles shows a statistically significant build up of autophagosomes in the neurite of unc-33 mutants when compared to the control strain DCR5074. Analysis of autophagy flux through western blotting also shows the accumulation of cleaved dFP in unc-33 mutants subjected to autophagy inducing conditions. This suggests that autophagy flux is dependent upon the proper functioning of UNC-33. Taken together, this is the first report that analyzes the potential role of UNC-33 in neuronal autophagy and provides insight on its role in neurodegeneration.

ALEJANDRA CRISTANCHO

WITH ALEXIA SAMARO

Behavioral Neuroscience Major
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ANDREA HOLGADO

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Professor of Biological Sciences

USING WORMS TO STUDY GENES INVOLVED IN ALZHEIMER'S DISEASE AND AGING

Recent studies have shown that the sixth-leading cause of death in the United States is Alzheimer's disease, and the number of deaths has doubled between 2000 and 2018. Collapsin response mediator protein-2 (CRMP2) in humans (UNC-33 in Caenorhabditis elegans) is a potential drug target for Alzheimer's disease therapies. Alzheimer's disease and other dementias typically arise partly due to the aging process in neurons. In aging, CRMP2 becomes hyperphosphorylated, which decreases the functionality of the protein, destabilizes the cellular skeleton, and leads to neurodegeneration. C. elegans aging can be slowed by molting into a dauer larva; an inducible developmental stage characterized as a non-aging stage. Researchers from our laboratory have discovered that unc-33 mutants are unable to form dauers in response to environmental stress, but the mechanism behind this is still unknown. Herein, we present a study that investigates whether a mutation in the daf-7 gene can rescue dauer formation and produce non-aging animals in unc-33 mutants. For this study, we created unc-33; daf-7 double mutants and we are currently testing dauer formation. This work is significant because it can shed light into our understanding of the genetic basis of aging and neurodegeneration. Moreover, these findings can be used to develop a therapy for neurodegenerative that could target DAF-7 and prevent its signaling, therefore ameliorating the effects of having low concentrations of CRMP2/UNC-33 in aging neurons.

STELLA CUNNINGHAM

Mathematics Major
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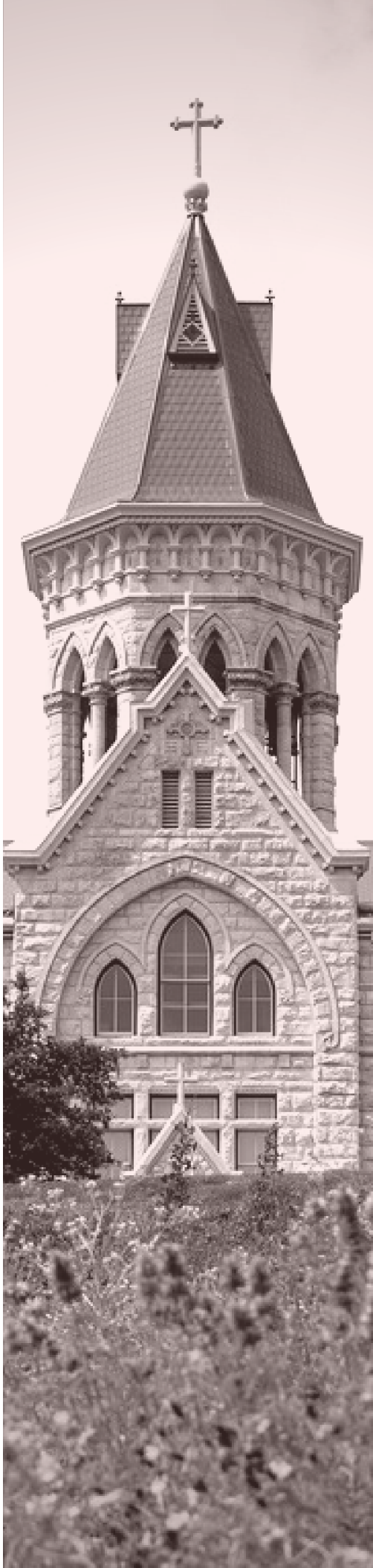
JASON CALLAHAN — FACULTY

Professor of Mathematics

COUNTING CONSTELLATIONS IN TAROT CARD READINGS

Tarot is a deck of cards used for games and fortune telling. To read one's fortune with Tarot cards, a reader presents a spread of cards. We use combinatorial methods to calculate how many spreads of Tarot cards exist. In the Tarot deck there are nine types of constellations comprising disjoint subsets of the deck. We write a Python program to count how many spreads contain at least three cards from any one of these constellations and then find the probability that a spread contains such a subset of cards. We also explore how this changes if we require the constellation cards to appear consecutively.



ELLA FOTINOS

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MATTHEW STEFFENSON **FACULTY**

Assistant Professor of Biological Sciences

OPTIMIZATION OF THE PROPHENOLOXIDASE IMMUNOASSAY PROTOCOL FOR ITALIAN HONEYBEES

Colony collapse disorder (CCD) is a phenomenon in which colonies of honeybees spontaneously lose all of their workers and consequently become nonfunctional. Due to honeybees' use in agriculture as pollination vectors, our ability to combat CCD has real world consequences. Because colony collapse disorder has been linked to pathogens, it is essential to monitor their immune health in the effort to preserve their presence and function. Organisms from different taxonomic groups have minor biochemical alterations such that using the same biochemical protocol to quantify immune function may not result in clear data. The purpose of this study was to identify an immunoassay recipe that could effectively evaluate prophenoloxidase (PPO) activity within Italian honeybee samples due to their mainstream use in beekeeping operations. Using an assay recipe previously optimized for spiders, we tested four recipes for PPO activity with each recipe having slightly different proportions of chemical reagents in an effort to identify a protocol specifically optimized for honeybees. Results indicated that the recipe with a higher concentration of bee hemolymph (i.e. a higher proportion of PPO enzymes) yielded the most accurate readings. This project emphasizes the importance of optimizing assay protocols specific to the taxonomic group of each study to ensure clear and accurate data.

HUNTER JACKSON

Biology Major
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LISA GOERING

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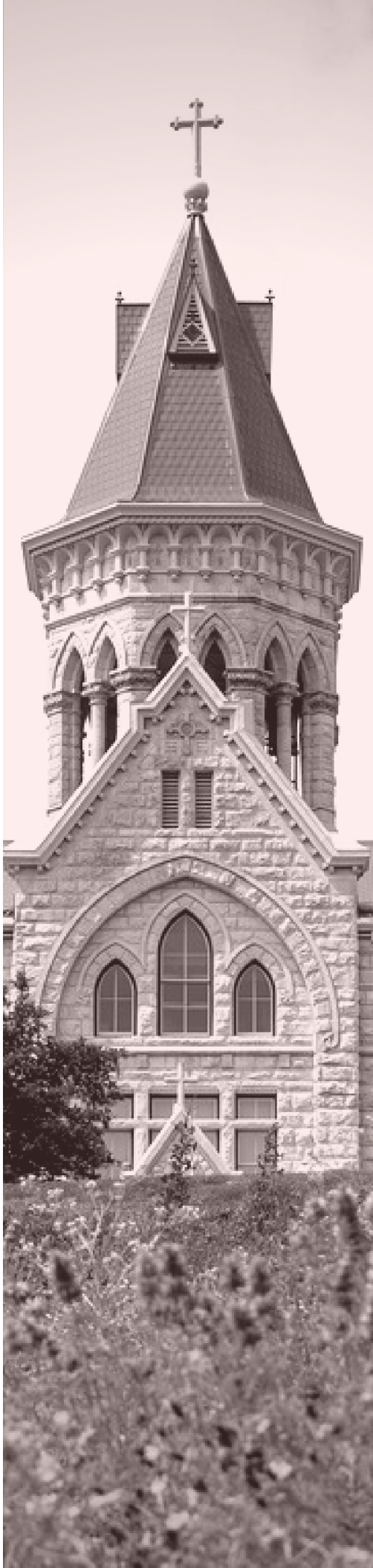
Associate Professor of Biological Sciences

LOOKING FOR GENETIC SUPERHEROES: MUTANT PHENOTYPES AFFECTED BY GENETIC BACKGROUND IN DROSOPHILA MELANOGASTER

When studying phenotypic variation, a variable that must be considered is how genetic background affects expression through mutations in modifier genes not directly linked to the target genes of interest. To study this phenomenon, we focus on the Epidermal Growth Factor Receptor (EGFR) pathway which has important implications for human health. For example, research has demonstrated the involvement of gain-of-function EGF receptor mutations in the development of lung cancer. In our model organism, the fruit fly D. melanogaster, EGFR signalling affects multiple developmental events during oogenesis, including placement of the dorsal-respiratory appendages, which are extensions of the eggshell important for proper gas exchange. Previous work in our lab has shown that placement is also influenced by genetic background as the phenotype due to EGFR mutations, is modified in flies from different populations. To better characterize the molecular events sensitive to variation in genetic background, we have focused on quantitative differences in expression of pointed and on qualitative differences in the location of pMAP-K, both of which are downstream targets of the EGFR pathway. Our findings suggest that transcription of the pointed gene is not a good predictor of dorsal appendage phenotype; our focus now is on spatial distribution of pMAP-K. We predict that the location of pMAP-K (visualized through immunohistochemistry) on the eggshell will also be affected by genetic background and will mirror dorsal appendage phenotypes. Our ongoing work will help elucidate all factors that affect EGFR pathway function; a thorough understanding of which is necessary for development of effective therapies to treat disease associated with EGFR misfunction in humans.



MELISSA LOPEZ

WITH EDUARDO CARRILLO

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Music Minor

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ANDREA HOLGADO — FACULTY

Professor of Biological Sciences

MUTATIONS IN MICROTUBULE-ASSOCIATED PROTEIN UNC-33 LEAD TO DEFECTS IN AUTOPHAGOSOME MATURATION IN C. ELEGANS, CONNECTING AUTOPHAGY AND NEURODEGENERATION

The accumulation of misfolded proteins is a shared pathology among neurodegenerative disorders such as Parkinson's and Alzheimer's. These defective proteins are degraded in a multi-step process known as autophagy. During this process, the defective proteins are first sequestered within an autophagosome. The autophagosome is then transported along microtubules from the synapses to the cell body. Microtubules and their microtubule-associated proteins (MAPs) such as CRMP2/UNC-33 are key elements supporting the transport of autophagosomes. Studies indicate that the accumulation of these autophagic vacuoles could contribute to the development of neurodegenerative diseases. Based on this information and considering that autophagy is dependent on the trafficking of autophagosomes to the cell body through motor proteins, our lab hypothesizes that trafficking of synaptic autophagosomes may be defective in unc-33 mutants. To test this hypothesis, we monitored the trafficking of double fluorescently tagged autophagosomes (dFP) in the AIY neuron using confocal microscopy. Autophagy flux was also quantified under autophagy-inducing conditions through western blotting techniques. To further understand the mechanisms by which CRMP-2/UNC-33 regulates autophagy, we analyzed autophagosome maturation during trafficking to the cell body. Images of 25 animals per strain, per condition, were obtained and quantified after randomization. Preliminary data of dFP in autophagic vacuoles shows a statistically significant build up of autophagosomes in the neurite of unc-33 mutants when compared to the control strain DCR5074. Analysis of autophagy flux through western blotting also shows the accumulation of cleaved dFP in unc-33 mutants subjected to autophagy inducing conditions. This suggests that autophagy flux is dependent upon the proper functioning of UNC-33. Taken together, this is the first report that analyzes the potential role of UNC-33 in neuronal autophagy and provides insight on its role in neurodegeneration.

JIMMY MARTINEZ

Chemistry Major
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SANTIAGO TOLEDO FACULTY

Associate Professor of Chemistry

MODELING THE ABERRANT ACTIVE SITE OF COPPER ZINC SUPEROXIDE DISMUTASE (SOD1)

SOD1 forms oxygen and hydrogen peroxide to act as an antioxidant and scavenge for superoxide. Superoxide is a form of oxygen that possesses an extra electron. It is highly reactive and can give rise to the damage of cells. Certain structural alterations of SOD1 may influence the development of diseases such as Amyotrophic lateral sclerosis (ALS). ALS is a progressive malady that leads to the death of neurons controlling voluntary muscles. The origin of ALS has been linked to the oligomerization of aberrant copper zinc superoxide dismutase (SOD1). Fluctuations within the electrostatic loop (ESL) of SOD1 allow for the formation of aberrant oligomers. The restriction of the electrostatic loop leads to a loss of mobility which in turn has an impact on the active site of SOD1. This influences the mobility of the active site geometries that lead to optimal function and ultimately can produce aberrant behavior. This alternative reactivity at the active site leads to overoxidation and ultimately the loss of copper. A deficiency of copper destabilizes the enzyme and in turn gives rise to the local unfolding of the ESL. In order to obtain an understanding of how different geometrical deformations such as the structural distortions at the active site of SOD1 caused by the restriction of the ESL, impact disease, we built a Cu(II) N4 pyridine based complex that might allow us to mimic these distorted geometrical states of SOD1. Its structural and spectroscopic characterization as well as early oxidative reactivity will be discussed.

KARINA MORENO

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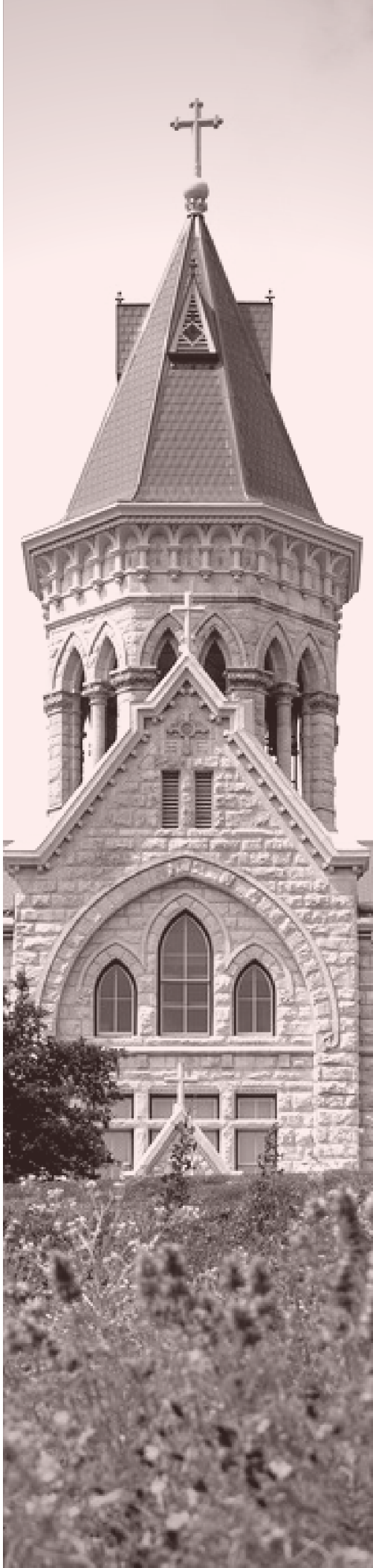
ANDREA HOLGADO **FACULTY**

Professor of Biological Sciences

ASSESSING THE LOCALIZATION OF DAF-16 IN C. ELEGANS UNC-33 MUTANTS

Approximately 50 million people worldwide have some form of dementia with Alzheimer's the most common form. Studies indicate collapsin response mediator protein-2 (CRMP-2) as a potential drug target for Alzheimer's. The Caenorhabditis elegans (C. elegans) ortholog to CRMP-2 is the UNC-33 protein. Under stressed conditions, C. elegans arrest to a dauer life stage increasing longevity. DAF-16 is a principal regulator of dauer formation. When C. elegans are exposed to favorable conditions, the DAF-2 pathway is activated triggering the phosphorylation and cytoplasmic localization of DAF-16. Preliminary research shows unc-33 mutant C. elegans do not make dauers under stressed conditions. We hypothesize that the DAF-16 protein is mislocalized into the cytosol when unc-33 mutants undergo stressed conditions, leading to the inability to produce dauers. To better understand the mechanisms that control dauer development and longevity, this study will investigate the localization of DAF-16 in unc-33 mutants using three DAF-16 isoforms fused with GFP in stressed conditions. Fluorescent microscopy and confocal imaging will be used to assess the localization of DAF-16. We hypothesize that DAF-16 will be in the cytoplasm of the unc-33 mutants that were exposed to stressed conditions. If these unc-33 mutants display DAF-16 localization in the cytosol, this will be a good indicator as to why unc-33 mutant C. elegans are unable to produce dauers. In studying DAF-16 in C. elegans, we will contribute to a better understanding of how CRMP-2 relays to dauer formation and, subsequently, aging and longevity, expanding our knowledge of the role of dysfunctional CRMP-2 in neurological disorders, such as Alzheimer's.



ALEXIA SAMARO

WITH ALEJANDRA CRISTANCHO

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ANDREA HOLGADO

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USING WORMS TO STUDY GENES INVOLVED IN ALZHEIMER'S DISEASE AND AGING

Recent studies have shown that the sixth-leading cause of death in the United States is Alzheimer's disease, and the number of deaths has doubled between 2000 and 2018. Collapsin response mediator protein-2 (CRMP2) in humans (UNC-33 in Caenorhabditis elegans) is a potential drug target for Alzheimer's disease therapies. Alzheimer's disease and other dementias typically arise partly due to the aging process in neurons. In aging, CRMP2 becomes hyperphosphorylated, which decreases the functionality of the protein, destabilizes the cellular skeleton, and leads to neurodegeneration. C. elegans aging can be slowed by molting into a dauer larva; an inducible developmental stage characterized as a non-aging stage. Researchers from our laboratory have discovered that unc-33 mutants are unable to form dauers in response to environmental stress, but the mechanism behind this is still unknown. Herein, we present a study that investigates whether a mutation in the daf-7 gene can rescue dauer formation and produce non-aging animals in unc-33 mutants. For this study, we created unc-33; daf-7 double mutants and we are currently testing dauer formation. This work is significant because it can shed light into our understanding of the genetic basis of aging and neurodegeneration. Moreover, these findings can be used to develop a therapy for neurodegenerative that could target DAF-7 and prevent its signaling, therefore ameliorating the effects of having low concentrations of CRMP2/UNC-33 in aging neurons.

ARIANNA VACIO

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ANDREA HOLGADO

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Professor of Biological Sciences

EVALUATING THE ABILITY OF UNC-33L TO RESCUE DAUER FORMATION IN UNC-33 MUTANTS

Aging in itself is not a disease, but with aging comes susceptibility. It is common knowledge that aging is an undeniable truth that brings forth many major diseases. Aging may be an undeniable truth for us, but for the nematode, C. elegans, this isn't the case. C. elegans can halt the aging process if exposed to harsh conditions and enter a non-aging state termed "dauer." The unc-33 mutant strain of the C. elegans, however, cannot enter into this state, and the cause is unknown. UNC-33 codes for three alternatively spliced isoforms, UNC33-L, UNC33-M, and UNC33-S. Previous studies have shown that UNC-33L, an isoform of UNC-33, was able to rescue the unc-33 mutant phenotype. Our research is intended to further investigate this matter by testing the hypothesis that a transgene coding can rescue dauer formation in unc-33 mutants. To this end, we will quantitatively assess dauer formation in animals possessing the UNC-33L transgene and compare them to control strains. These results will help us better understand whether the isoform UNC-33L plays a role in promoting the non-aging process in C. elegans. These findings may provide insights into uncovering parts of an evolutionarily conserved molecular machinery that slows down aging and minimizes susceptibility to age-related diseases.

CONTENTS

Behavioral & Social Sciences

HILDANA ADHANOM

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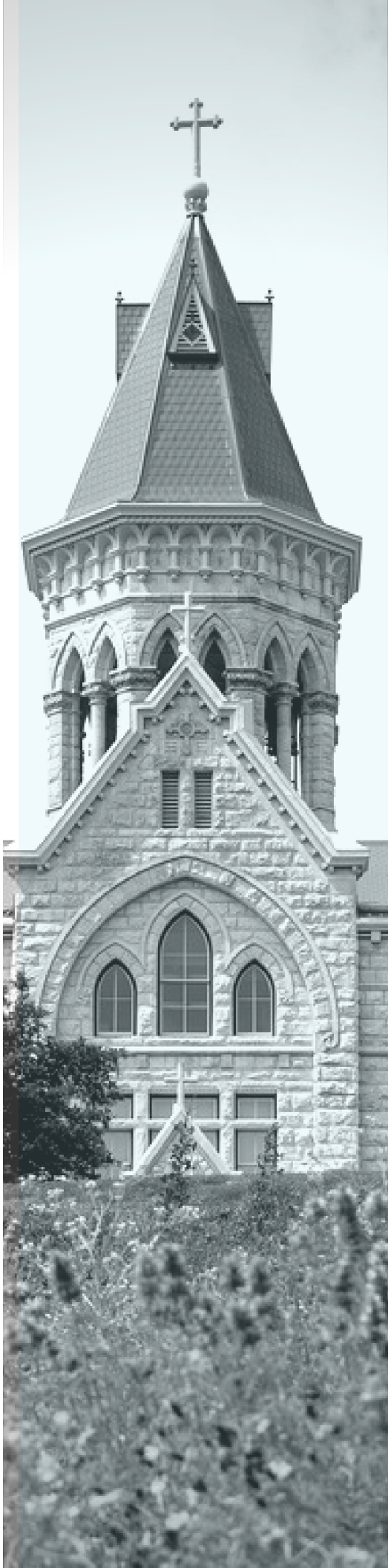
DR. ANGELA JU **FACULTY**

Assistant Professor of Global Studies

WATER CRISIS: SINKING MEXICO CITY & OVER FLOWING CAPE TOWN

This paper answers the research question "Why has it been so difficult for Mexico City to solve its water crisis while Cape Town has been able to overcome it?" from three different interdisciplinary research angles namely Global Studies, Political Science and Social Work. It begins by comparing and contrasting the historic implications of colonial heritage in Mexico City as well as Cape Town that explain the current phenomena of flooding and water scarcity. Next, it will present the climatic and hydrological conditions that will impose a direct threat on human rights, institutions, infrastructure, social norms and social identities. Lastly, the paper will review policies in relation to infrastructure, funding, education and government to state action plans and recommendations that will alleviate the crisis. Thesis: Socio-environmental changes are the result for water hazards besides climate change and waste generated from society. This provides a better understanding of the abundance of water resources and its effect on the two cities.



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MITY MYHR

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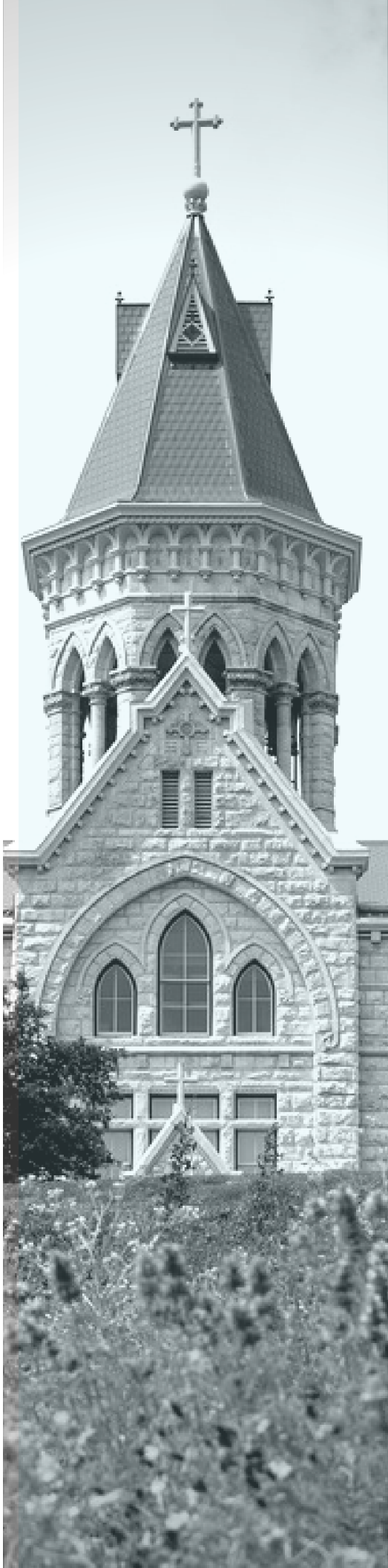
GENOCIDE AND HEALING: POL POT'S LEGACY AMONGST KHMER BUDDHIST MONKS

In 1975, Cambodia entered a new age of destruction and construction under the Khmer Rouge. During the four-year reign led by Pol Pot, communist-inspired revolutionaries set out to create a pure socialist society that was free of any pre-existing institutions, resulting in the death of nearly a quarter of the population. This paper evaluates how Buddhist monks remember Pol Pot and the role his legacy continues to play in rebuilding Khmer Buddhist communities. In this paper, I analyzed testimonies from monks that lived during the Cambodian Genocide and drew upon commentary on the economic development strategies instituted under Pol Pot's leadership to explain the creation of his legacy. I argue that Pol Pot's legacy is a combination of the effects of the intentional attacks on Buddhist culture and the acts of violence committed by the Khmer Rouge soldiers. Four decades after the fall of the Khmer Rouge, the Pol Pot period continues to influence Cambodian society economically and culturally and remains a motivator for Khmer Buddhists in their efforts to recover from the destruction of the Cambodian Genocide. By analyzing the impact of the Khmer Rouge's goals, this paper highlights the relationship between one man's legacy and efforts to heal within a religious community.



MAGALY CITAL

WITH LILLIAN SHORTLE

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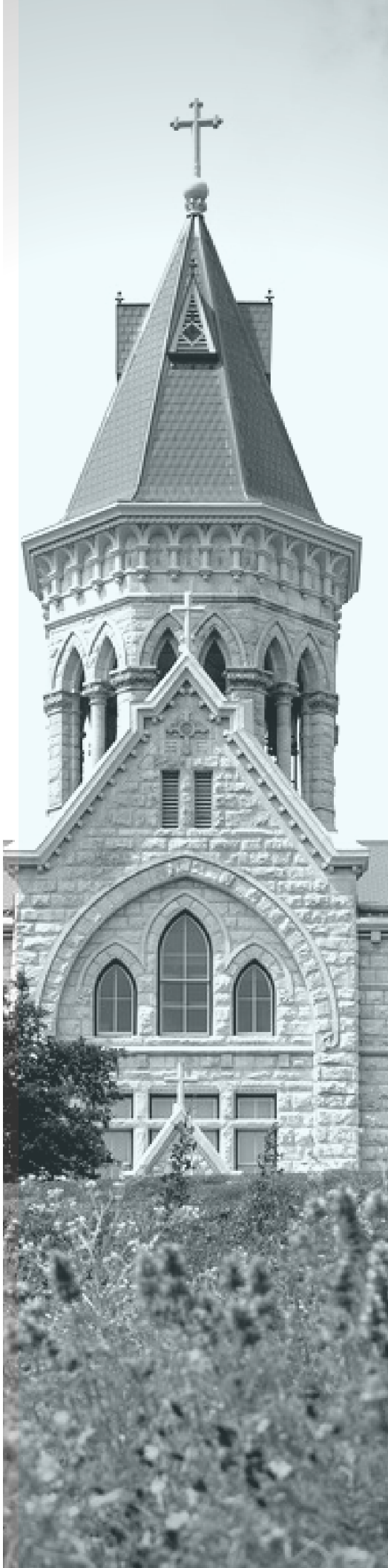
EMILY BARTON — FACULTY

Assistant Professor of Behavioral Neuroscience

THE IMPACT OF PANDEMIC-RELATED STRESS ON ALCOHOL USE AMONG COLLEGE STUDENTS

Higher levels of stress may lead to increased alcohol use as a coping mechanism. The COVID-19 pandemic has brought about changes that have made people more susceptible to sustained high stress. The purpose of this study is to investigate COVID-19 related stress and its impact on alcohol use among college students. Prior research has found that there was an increase in alcohol consumption during the early portion of the pandemic (Lechner et al., 2020; Wardell et al., 2020). Additional research has found that women may be more likely than men to engage in drinking as a way to cope with psychological distress (Hilderbrand & Lasek, 2018). We hypothesize that people who score higher on COVID-19 related stress will report higher alcohol consumption and that women will show stronger associations between drinking behavior and COVID-19 related stress relative to men. Participants will complete an anonymous online questionnaire that includes a measure created by the researchers that assess a variety of concerns about the pandemic (contracting COVID-19, family or friends contracting COVID-19, financial stress, academic stress, loneliness, boredom, etc); the Brief COPE Inventory (Carver, 1997) to measure coping mechanisms; and the Alcohol Use Disorder Inventory (AUDIT; WHO, 2001) to measure alcohol consumption. Data collection will begin in February 2021. Implications: While some research examined alcohol use earlier in the pandemic, a gap remains in our understanding of the long-term effects of the COVID-19 pandemic on alcohol behavior.



CAMILLE DEDEAUX

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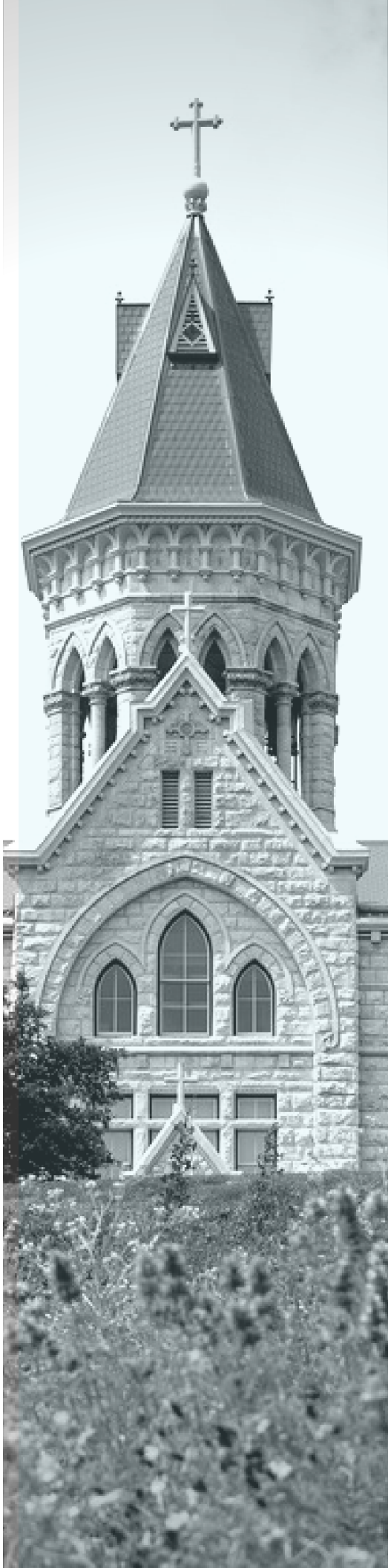
PETER BECK — FACULTY

Professor of Environmental Science and Policy

U.S. FEDERAL BYCATCH POLICY: HOW ARE WE ADDRESSING OCEAN WASTE?

Bycatch, or the unintentional catch of non-target fish and ocean wildlife, is one of the most significant threats to maintaining healthy marine ecosystems around the world. Bycatch threatens endangered species, hinders efforts to rebuild fish stocks and changes the availability of prey which can have negative effects throughout entire ecosystems. As the occurrence of bycatch has increased significantly due to the expansion of modern fishing gear and practices, industry leaders and the scientific community are progressively realizing the need to reduce this phenomenon in order to preserve valuable ocean resources. Through examining scientific recommendations, management practices, enforcement guidelines, civic engagement and the effectiveness of adopted policies, this project evaluates both past and present federal policies to reduce domestic bycatch rates. Major pieces of legislation to be discussed are The Marine Mammal Protection Act (1972), The Magnuson-Stevens Fishery Conservation and Management Act (1976), and The Dolphin Protection Consumer Information Act (1990). The findings of this analysis show that these laws have not been able to reduce bycatch rates to sufficient levels throughout all regions of the U.S. due to a lack of proper and consistent implementation of the written regulations. Rather, most of the progress that has been made can be attributed to NGO involvement and grassroots organizing that inspired national participation in the 1988 tuna boycott, which demonstrated the compelling influence that consumers can have when they place pressure on an industry to change. Strengthening oversight procedures, investing in the development of technological solutions, and setting uncompromising bycatch limits for all threatened marine species are among the top policy recommendations for the future.



ANGEL ESPINOSA

WITH CIARA CROCHET

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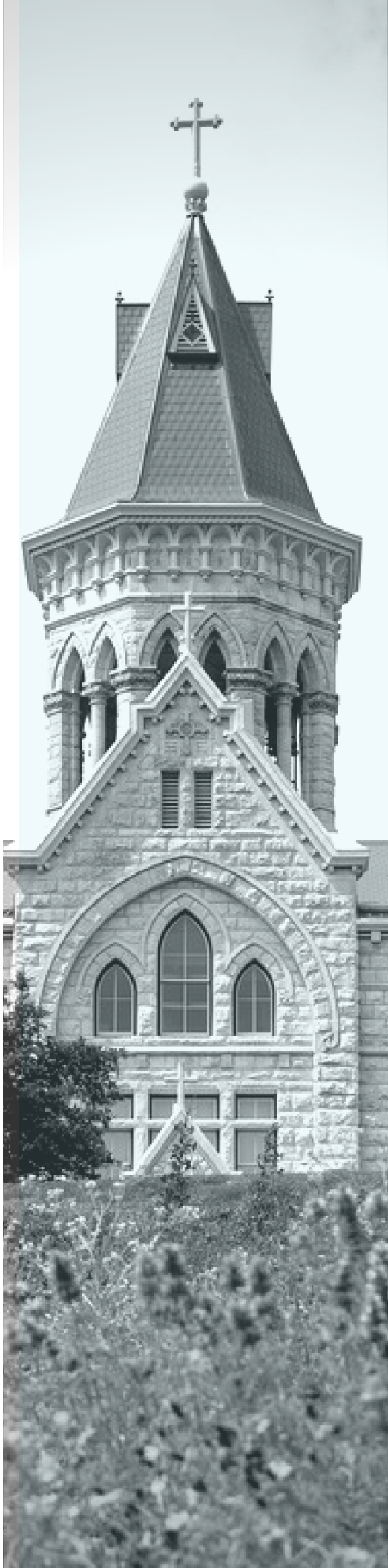
KATHERINE GOLDEY **FACULTY**

Associate Professor of Behavioral Neuroscience

WHERE DID THE SEX GO WRONG? ATTACHMENT STYLES AND MULTIFACETED SEXUAL DESIRE

Attachment styles—secure, anxious, and avoidant—have significant impacts on romantic relationships and are associated with sexual desire and satisfaction. That is, individuals who display a secure attachment style tend to have higher sexual desire and satisfaction, whereas those with avoidant and anxious attachment styles have lower sexual desire and satisfaction, (Mark et al., 2018; Mikulincer & Shaver, 2007). However, measuring sexual desire as "higher" or "lower" ignores the multifaceted nature of sexual desire; sexual desire may be focused on genital pleasure or eroticism, on pleasing a partner, on intimacy, etc. (Chadwick et al., 2017). Therefore, the purpose of this study is to investigate how attachment styles are associated with sexual desire, using a multifaceted measure of sexual desire that considers different forms/goals of desire. We hypothesize that (A) those who score high in attachment avoidance will have lower scores in intimacy-oriented desire and (B) those who score high in attachment anxiety will score high in partner-focused desire. Following IRB approval (currently under review), we will recruit individuals age 18+ to participate in our online survey about background, demographics, relationship status, attachment style, and multifaceted sexual desire. This study has the potential to inform understandings of the relationship between attachment style and different forms of sexual desire. This information may be useful in the counseling and assessment of romantic relationships by providing a better understanding of how an important individual difference variable, attachment style, may influence a person's sexual motivations.



MARIANNE GARCIA

Behavioral Neuroscience Major
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EMILY BARTON **FACULTY**

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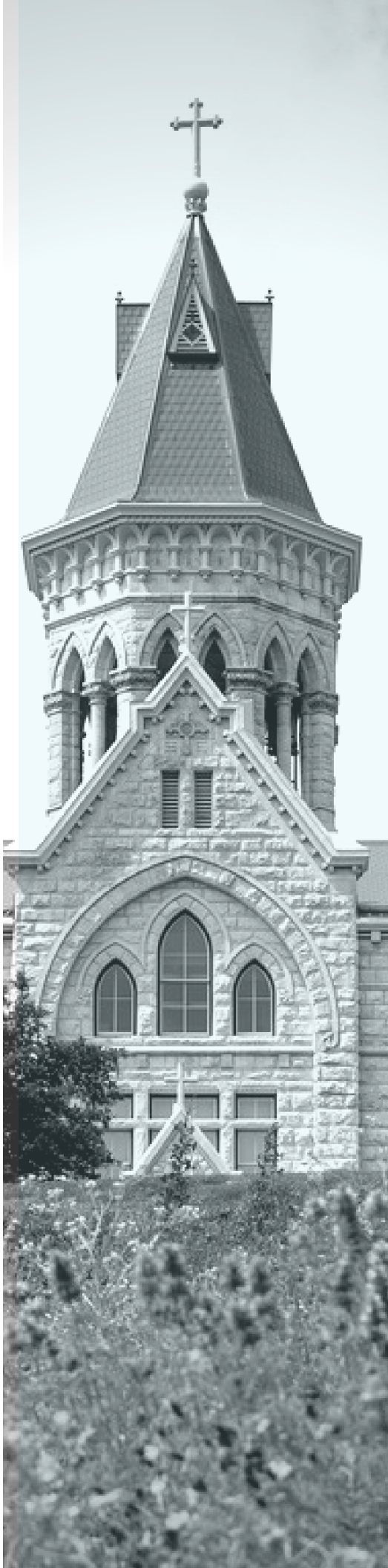
THE SOCIAL COMPETENCE, SELF-PERCEPTIONS, AND QUALITY OF LIFE OF AUTISTIC ADULTS

Autism Spectrum Disorder (ASD) is a neurodevelopmental disorder characterized by impairments in social communication, social perception, and maintaining social relationships. Traits of ASD are often observed and diagnosed in early childhood and are present throughout the individual's entire lifetime. However, most of the literature focuses exclusively on children and adolescents, largely excluding adults. This narrow focus results in limited information on the functionality of support networks and social relationships for autistic adults. Because ASD manifests in a variety of phenotypes and symptoms, the specific social and communicative difficulties differ from individual to individual. To address this gap, this study investigated the self perceived social competence and quality of life of autistic adults by looking into the education level and the availability of support services received during and post high school. An online survey assessing social competence, self-perception, and quality of life was disseminated through email to reach participants (N = 6). Although there were some slight differences in social competence and quality of life scores, it was generally found that education level and timing of services did not significantly alter quality of life or perceived social competence. Study results were limited due to small sample size, difficult population access, and the specific subset of autistic adults who are able to complete an online written survey. More extensive research is needed to assert conclusive results about autistic adults and the strength of available support services.



BIANCA GARCIA-GONZALEZ

WITH BERNADETTE VILLALPANDO, CHRISTINA PRENTIS, DENISE CARILLO, SOPHIA MCINTURFF, CALEY RINCONES

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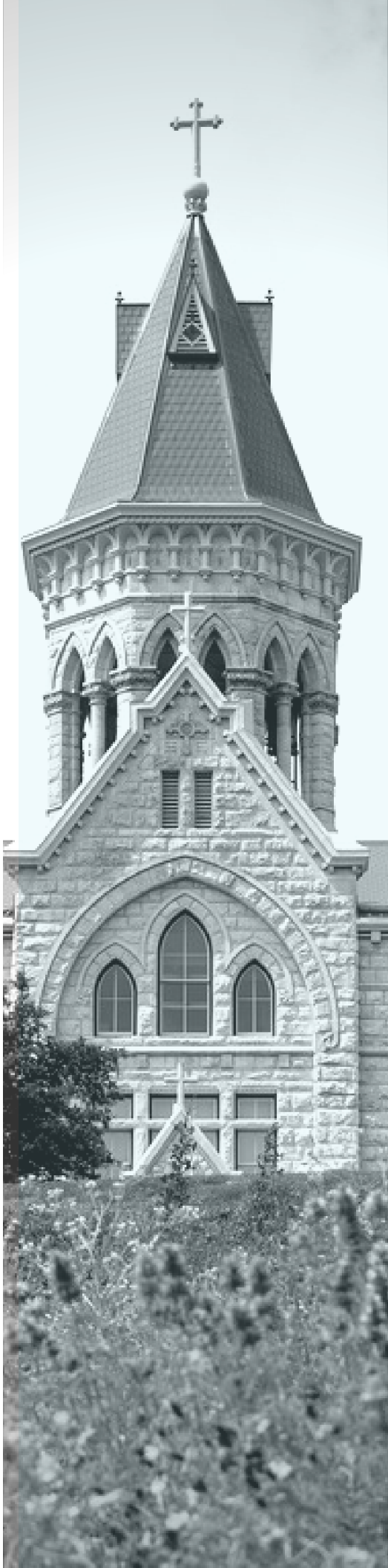
PAIN PERCEPTION AS A FUNCTION OF VIRTUAL REALITY CONTENT AND PAIN INTENSITY

Virtual reality (VR), in the form of an interactive game, has been shown to decrease pain during minor medical procedures, likely due to distraction from the pain. In a previous study, we attempted to reduce acute pain using a calming VR experience (nature scenes). Using VR to evoke relaxation, instead of distraction, can decrease psychological discomfort but has not been tested in regards to pain reduction. This study compared calming and interactive VR in their ability to decrease acute pain brought about by cold water immersion ("cold pressor test"). Participants (n=117) provided pain ratings while submerging their hand in water that was either 4˚C or 8˚C while simultaneously engaging in a VR program that was either interactive or relaxing. The data did not reveal any significant differences among our conditions, but there was a trend for those in the 8˚C water condition who also watched the relaxing VR to report less pain. These findings indicate that the ability of VR to lessen pain is modest, but given that VR is inexpensive and carries very little risk, future studies should continue to investigate its use for pain control.



NATALIE HAYNER

English Literature Major
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MITY MYHR **FACULTY**

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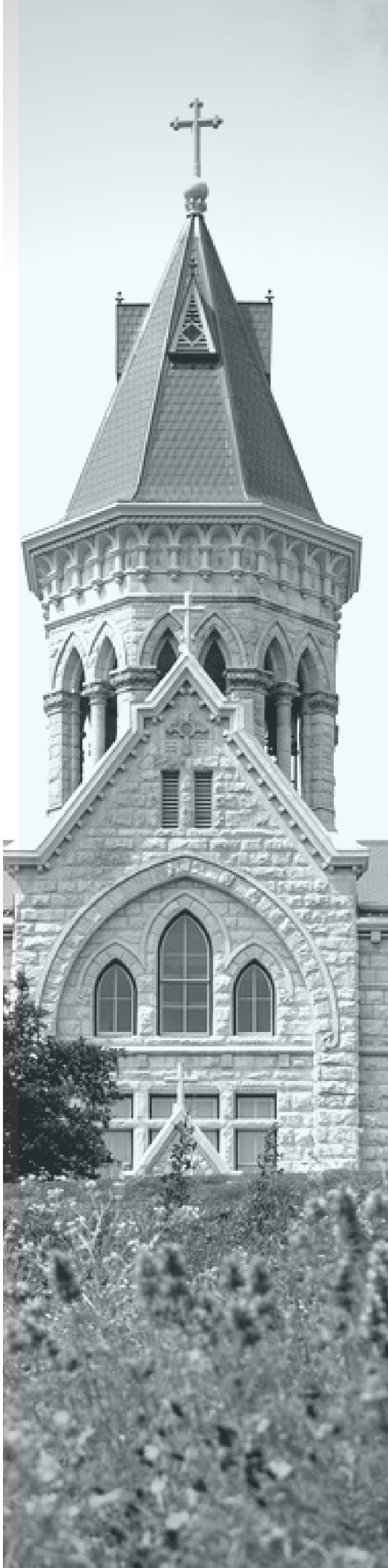
ON THE JEWS AND THEIR LIES: GRAPPLING WITH MARTIN LUTHER'S ANTI-SEMITIC HISTORY



Historically, Jews have been persecuted throughout the world, for a plethora of reasons. This persecution of Jews was especially prevalent in Reformation-era Germany, where anti-semitism swelled as Protestant numbers increased. One of the main reasons for the surge in anti-semitism was the role Martin Luther played in swaying the Protestant opinion of Jews. Over the years, Luther's many treatises on the subject show a dramatic shift from tolerance to intolerance, which corresponded with changing Protestant opinion towards Jews. This research paper explores the position of Jews in Reformation-era Germany and the shifting opinions of Jews that Christian communities held. Through an exploration of these changes, this paper will argue that life for German Jews changed drastically as a direct result of Martin Luther's influence on the rise of anti-semitism, the replacement of Jews as money-lenders, and increased attempts at either Jewish expulsion or conversion. This thesis is supported by an analysis of Martin Luther's sermons and treatises as well as a range of secondary materials written by historians and religious scholars. Through an examination of the aforementioned sources, the author is able to highlight the impact a single historical figure can have on modern anti-semitism. The aim of this research paper is to impart the importance of religion in the role of anti-semitism both historically and in modernity. By proving Martin Luther's role in shifting opinions towards anti-semitism and the societal positions of Jews, it is the author's hope to contextualize the persistent demonization of Jews through the excuse of religion.

VALARIE MARTIN

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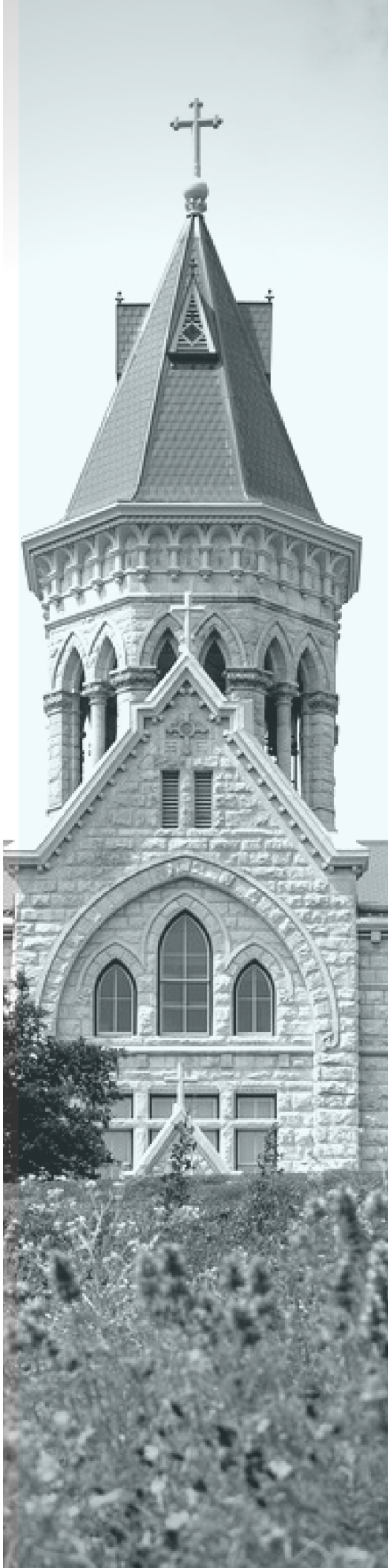
DISCIPLINING TRAUMA: AN EVALUATION OF FOSTER PARENTS DISCIPLINARY ACTIONS AND TRAUMA INFORMED CARE EXPERIENCE

Trauma is persistent throughout the foster care system, and children often experience symptoms such as depression and anxiety due to their traumas. The researchers are interested to identify the extent that foster parents could identify these symptoms of trauma when disciplining the children in their care. Participants are asked to complete a survey of 6 scenarios describing a child experiencing different symptoms of trauma, and to indicate whether they agreed with the disciplinary actions taken in the scenarios. 3 of the scenarios indicate that the child has gone through a traumatic event, and the other half do not. The purpose of this study is to show that foster parents may not be able to easily identify symptoms of trauma, and therefore treat children differently when they are aware the child has gone through a traumatic event versus if they are not aware the child has gone through trauma. This study will further show that foster parents may not be adequately trained in trauma informed care and provide insight on how trauma informed care training can be improved for foster parents. This study is in progress, and the initial data will be presented at SOURCE.



COLTON MITCHELL

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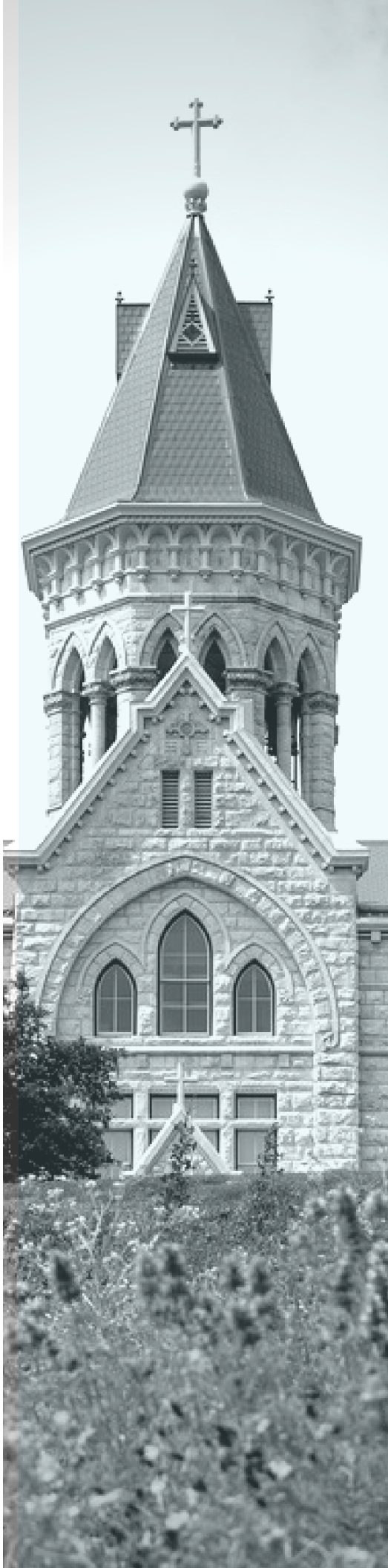
THE EFFECTS OF LIGUSTRUM SINENSE AND L. JAPONICUM ON BIRD ABUNDANCE AND DIVERSITY WITHIN TRAVIS COUNTY, TX

The presence of invasive plant species is known to affect the abundance and diversity of various animal species. Researchers from across the world have monitored the effects of invasive species on wildlife, mostly discovering that increases in invasive plant species lead to the relocation of wildlife to areas with more native species. Chinese privet (Ligustrum sinense) and Japanese privet (Ligustrum japonicum) are two of the most common invasive species in Central Texas, yet little research has been done on their impacts on animals and none that I know of has focused on birds. Privet displaces native plants and likely affects native birds which rely on native plants for food and shelter. To address this research gap, I assessed 16 sites across four watersheds (Bee Creek, Blunn Creek, Boggy Creek, and Bull Creek) throughout Travis County, TX with varying levels of privet abundance and used the point-count method to measure bird abundance and diversity. I found a negative relationship between privet abundance and both bird abundance and diversity, suggesting privet removal may lead to increased presence and diversity of birds. Overall, this study provides valuable knowledge regarding the impacts of privet on Central Texas birds and should be of great interest to local land managers and invasive species biologists.



DESTINY NICOLL

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ADAM McCORMICK **FACULTY**

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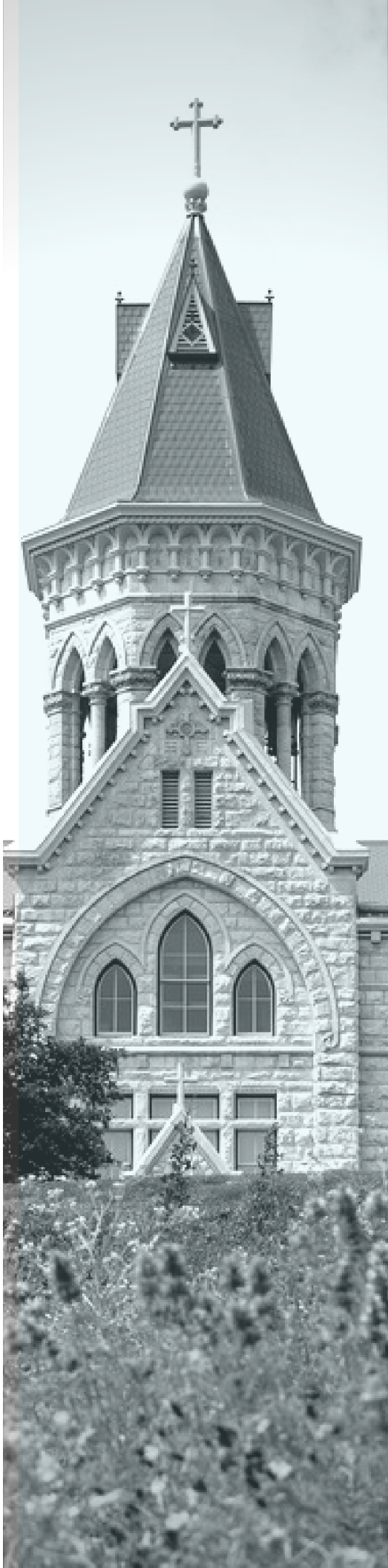
ASSESSING COMPASSION FATIGUE AMONGST SOCIAL WORKERS IN THE CHILD WELFARE SYSTEM

Child welfare research has historically placed little emphasis on the social workers who are on the frontlines in their work with children and families. Compassion Fatigue is a concept that refers to the emotional and physical exhaustion that can affect helping professionals and caregivers over time. This study utilized a quantitative approach to explore the factors that contribute to compassion fatigue, as well as its effects on social workers in the child welfare system. Social workers were assessed using the Compassion Fatigue Self-Test for Psychotherapists to examine the causes and symptoms of compassion fatigue amongst child welfare social workers. The results showed that social workers were less likely to have Compassion Fatigue if they had quality supervision in their agencies.



MARTHA PEREZ PALMA

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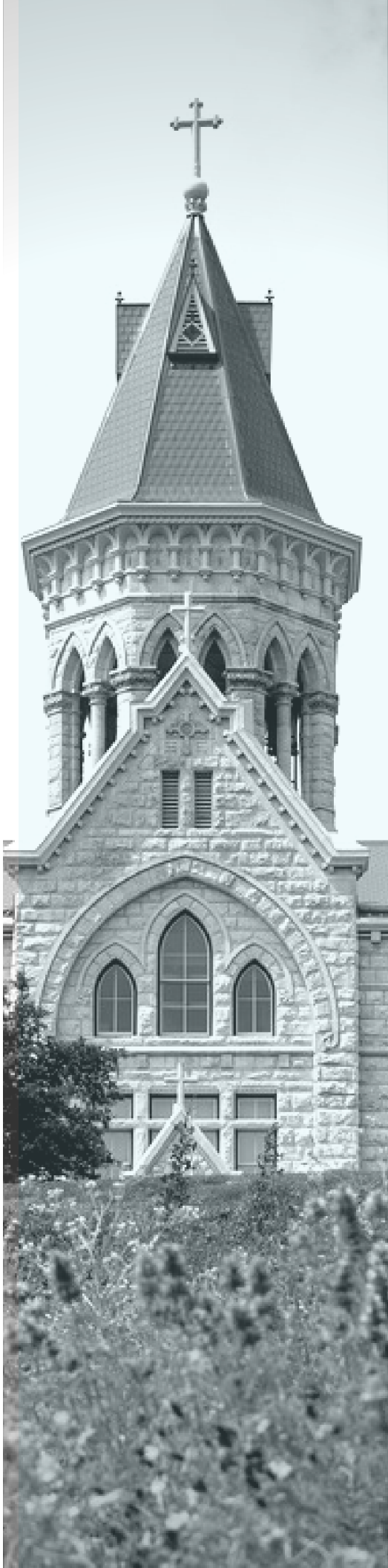
ATTRIBUTIONS OF BLAME FOR SEXUAL ASSAULT VICTIMS: THE INTERSECTION OF BISEXUALITY AND RACE

Survivors of sexual assault are often met with skeptical reactions upon disclosing their trauma to acquaintances, family members, and law enforcement. Two distinct groups of women are most vulnerable to being perceived as responsible for their assault: bisexual women and women of color. The purpose of this study is to focus on the intersection of sexuality and race and how that intersection influences participants' likelihood to view those survivors as "deserving" their assault. We hypothesize that participants will attribute the most blame to bisexual women of color in comparison to their heterosexual and white counterparts. Bisexual women and women of color are two groups who separately have stereotypes of promiscuity and hypersexuality placed on them, so it would be logical to conclude that the effect would be heightened for a bisexual woman of color. Additionally, people with higher rape myth acceptance are more likely to engage in victim-blaming. Participants will read one vignette where the demographics of the victim will be randomized. Perceived promiscuity of the victim and rape myth acceptance will also be measured as predictors of blame. Focus on this particular intersection (sexuality and race) is critical in identifying survivors that may be more vulnerable to secondary trauma as a result of being blamed for their assault. This can provide context for clinicians to better personalize treatment and care of this population. The study is currently under IRB review; data collection has not begun at time of submission.



SOFIA RODRIGUEZ

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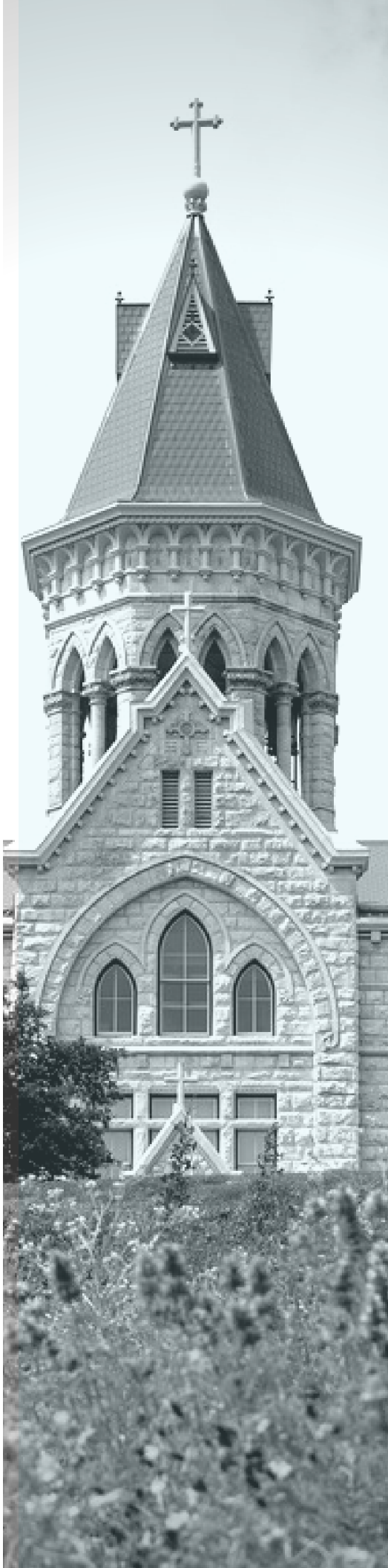
INTIMACY IN THE TIME OF COVID: PANDEMIC-RELATED STRESS AND SEXUAL DESIRE

This study will investigate stress related to COVID-19 and its impact on sexual desire among college students. Some prior research has addressed the impact of the pandemic on sexual behaviors, with some findings suggesting a decline in sexual frequency accompanied by an increase in variety of sexual behaviors (Lehmiller et al., 2020) or a decline in sexual satisfaction associated with anxiety (Ko et al., 2020). Other research has suggested that for couples, the pandemic may provide opportunities for both increased intimacy (Arafat et al., 2020; Lopes et al., 2020) and increased conflict (Luetke et al., 2020). We hypothesize that college students who report higher COVID-19 related stress due to loneliness will report higher dyadic sexual desire, whereas those who report higher COVID-19 stress related to the virus itself will report lower dyadic sexual desire. Students will be asked to complete an online questionnaire about background information, their experiences of stress related to COVID-19, and their sexual desire and behavior. To measure COVID-19 related stress, we will use a measure created by the researchers that assesses concerns about the pandemic. Solitary sexual desire and dyadic sexual desire will be measured using the Sexual Desire Inventory. Data collection will begin February 2021. Implications: This study could fill a gap in the literature about sexual behavior in relation to stress. It can help researchers and clinicians better understand how pandemic-related stressors influence sexual desire and assist public health experts in advising the public on balancing social distancing and sexual well-being.



OLIVIA RODRIGUEZ

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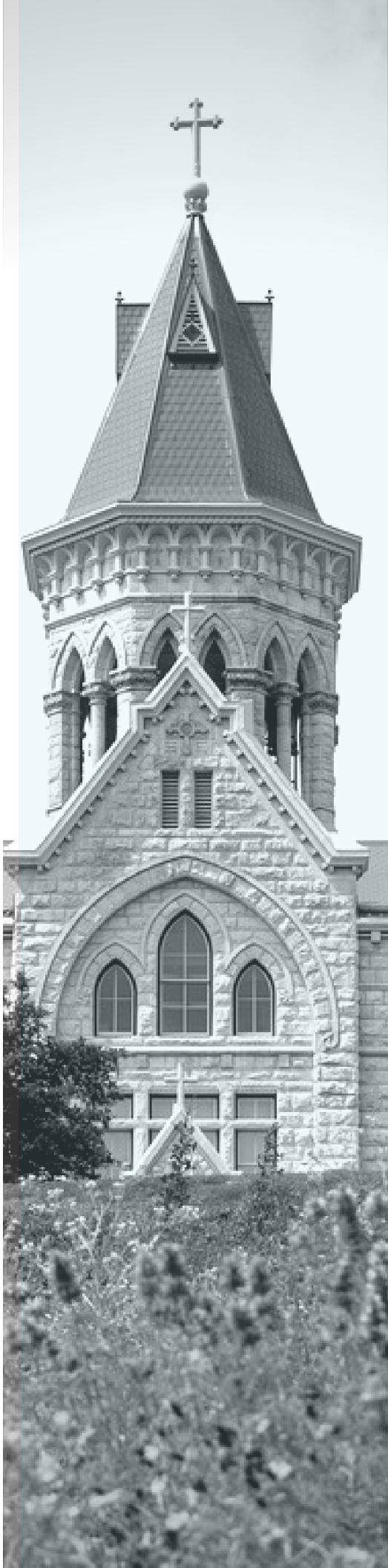
A SIGN OF HEALTH OR LAZINESS? ATTITUDES TOWARD SLEEP AND CORRELATES OF NEGATIVE JUDGMENTS

Healthy behaviors are valued by many adults in the United States today. Sleep, although known to be essential to mental and physical health, might be an exception-- as sleeping may be perceived as a sign of weakness or laziness. This study aims to create a reliable scale for measuring sleep attitudes, as well as to increase understanding of what factors influence people's attitudes towards sleep. Specifically, the study will explore whether or not people see sleep as a weakness-- as there is little prior research on this subject. In this correlational study, an online sample of adults from the U.S. will complete a survey in which they will make judgments about an individual based on whether they sleep greater or fewer hours. They will also answer questions intended to measure attitudes towards sleep and Protestant Work Ethic (PWE). Although this research is still in progress, it is anticipated that those with less positive attitudes towards sleep will make less positive judgments of people who sleep a normal amount compared to those who sleep fewer hours. It is also anticipated that those who score higher on Protestant Work Ethic will hold less positive attitudes towards sleep. The study will be conducted in late March, and main analyses will be conducted in time to present. Understanding attitudes towards sleep and what motivates them will allow for public health improvements, as the work and personal environments of many adult Americans can be improved upon by dismantling negative attitudes towards sleep.



REBECCA SANCHEZ

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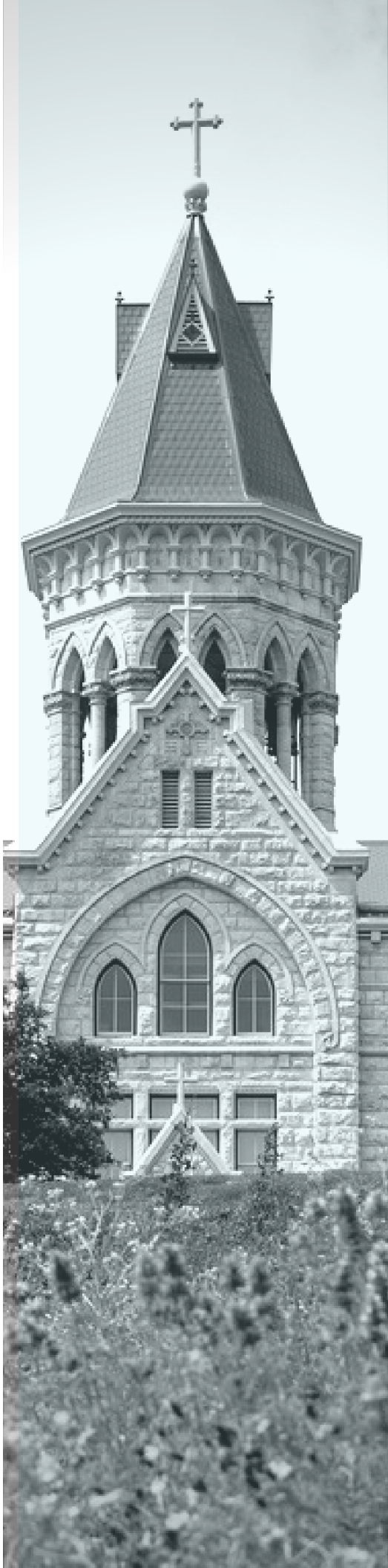
Associate Professor of Behavioral Neuroscience

STIs and Stigma: Effects of STI Diagnosis and Sexual Identity on Perceptions of Potential Partners

Much research on sexual health focuses on prevention of sexually transmitted infections (STIs). While this focus on prevention is essential, less research has addressed how people who already have an existing STI diagnosis can engage in healthy and satisfying sexual relationships. The current study examines to what extent potential partners are stigmatized for an STI diagnosis and whether prevalence of this stigma varies based on sexual identity. Participants (n= 189) were presented with a vignette describing a potential romantic/sexual partner named Jamie. Participants were randomly assigned to one of 5 conditions, which varied in how Jamie's STI status was described. Results find that participants judged Jamie's personal characteristics (e.g., responsibility, integrity) more harshly if Jamie was never tested for STIs than in any other condition, but that participants were similarly unlikely to want to have sex or a relationship with Jamie in the HSV, HIV, and never tested conditions, deeming Jamie's STI status as 'just as bad' as never being tested. Thus, individuals who are currently receiving treatment for HIV or HSV are perceived to be less desirable as romantic or sexual partners. This suggests a need for public health interventions to decrease stigmatization of individuals with incurable STIs. Qualitative responses suggest that there are potential differences in sexual and/or gender minority in regards to perceived status. We suggest further research to help indicate why this might be.



LILLIAN SHORTLE

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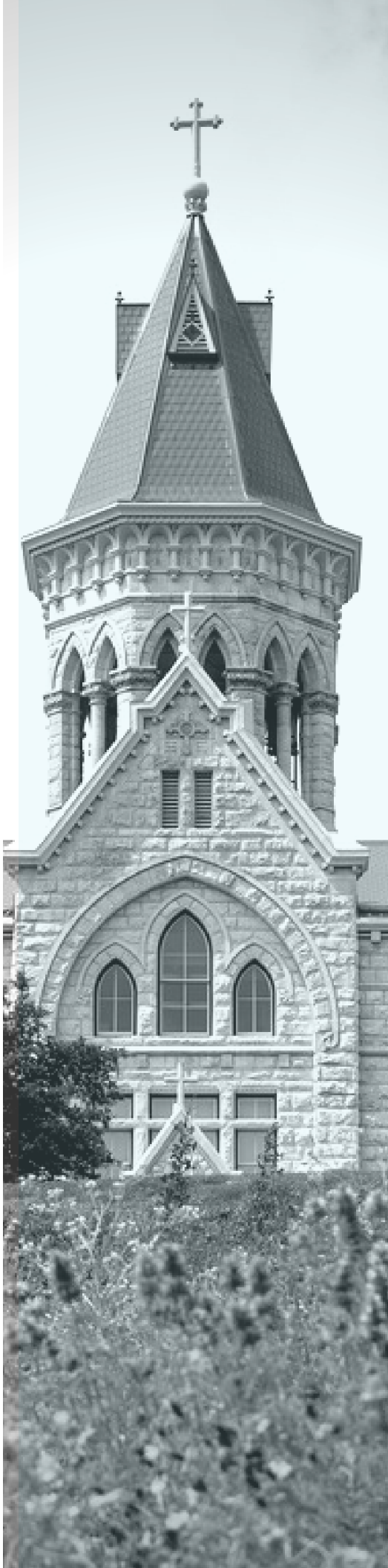
Assistant Professor of Behavioral Neuroscience

THE IMPACT OF PANDEMIC-RELATED STRESS ON ALCOHOL USE AMONG COLLEGE STUDENTS

Higher levels of stress may lead to increased alcohol use as a coping mechanism. The COVID-19 pandemic has brought about changes that have made people more susceptible to sustained high stress. The purpose of this study is to investigate COVID-19 related stress and its impact on alcohol use among college students. Prior research has found that there was an increase in alcohol consumption during the early portion of the pandemic (Lechner et al., 2020; Wardell et al., 2020). Additional research has found that women may be more likely than men to engage in drinking as a way to cope with psychological distress (Hilderbrand & Lasek, 2018). We hypothesize that people who score higher on COVID-19 related stress will report higher alcohol consumption, and that women will show stronger associations between drinking behavior and COVID-19 related stress relative to men.

Participants will complete an anonymous online questionnaire that includes a measure created by the researchers that assesses a variety of concerns about the pandemic (contracting COVID-19, family or friends contracting COVID-19, financial stress, academic stress, loneliness, boredom, etc); the Brief COPE Inventory (Carver, 1997) to measure coping mechanisms; and the Alcohol Use Disorder Inventory (AUDIT; WHO, 2001) to measure alcohol consumption. Data collection will begin February 2021. Implications: While some research examined alcohol use earlier in the pandemic, a gap remains in our understanding of the long-term effects of the COVID-19 pandemic on alcohol behavior.



LOGAN SIGEL

WITH NATALIE TURNER

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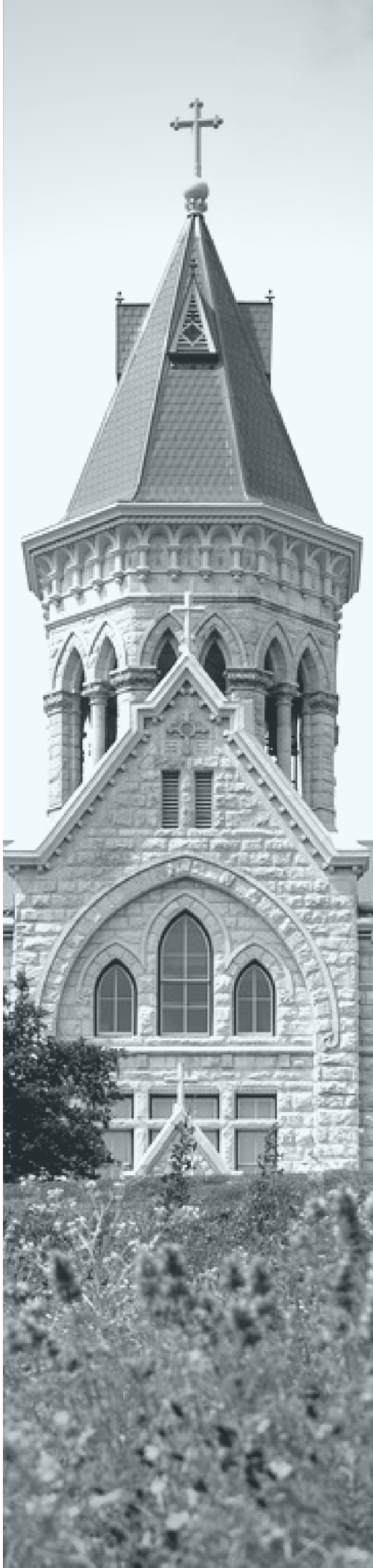
CARBON SEQUESTRATION IN NATIVE ASHE JUNIPER AND INVASIVE PRIVET FORESTS OF THE TEXAS HILL COUNTRY

Atmospheric carbon levels continue to rise globally from greenhouse gases (GHGs) such as carbon dioxide (CO 2) due to anthropogenic activities. As climate change has become an increasingly more pressing issue, there have been consolidated efforts to curb its effects and slow its growth. A natural mechanism to mitigate increased CO 2 emissions involves managing forests to increase the amount of carbon (C) that they pull down from the atmosphere and store in soils and biomass. Efforts to maximize the C storage rely on accurate estimates of C stored under forest ecosystems of different age, composition, and management, but these data are often lacking. This study sought to compare C storage in native Ashe juniper-live oak forests with that of invasive privet forests within the Texas Hill Country and the City of Austin. Tree and soil C data were collected at 8 native and 8 invasive forested sites located in the Balcones Canyonlands Preserve, a private ranch, and several City of Austin Parks on a range of different soil types. We quantified and compared soil organic matter and basal area of trees as a proxy for total carbon stored, and averaged by forest type. Our preliminary results suggest little difference in carbon storage in soils between the two forest types, but higher carbon in biomass of the native Ashe juniper forests. These results can be used to inform local land management policy seeking to maximize C storage in Central Texas.



ANDRES TARGA

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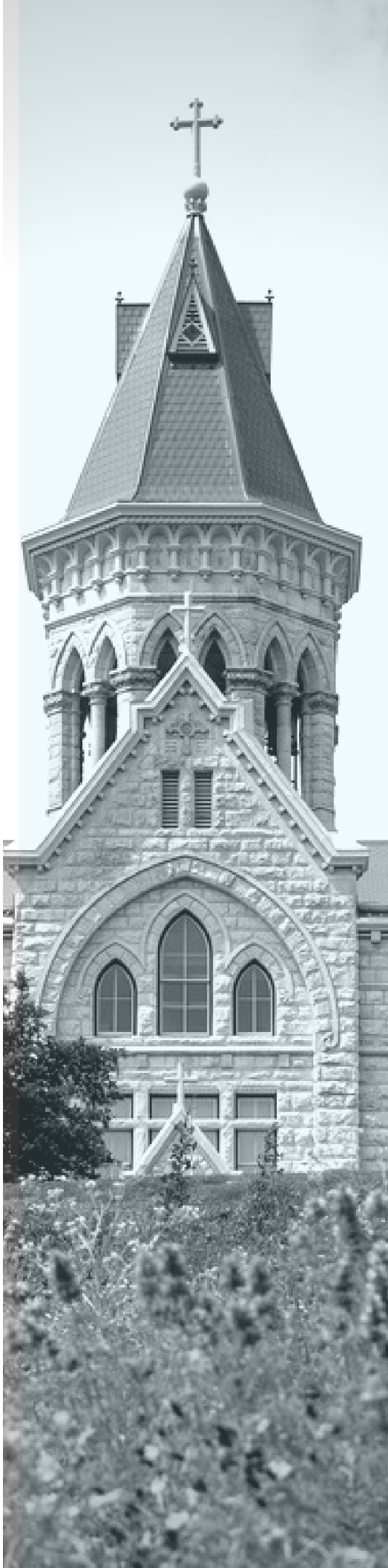
CHANGES IN PLANT DIVERSITY AND ABUNDANCE IN RESPONSE TO SHADED FUEL BREAK TREATMENTS AT WILD BASIN WILDERNESS PRESERVE, AUSTIN, TX

Cities like Austin are constantly growing and pushing development into the suburban-exurban zone, which puts pressure on protected areas. To mitigate risk of wildfire spread across the Wild Urban Interface (WUI), firefighters have begun to implement shaded fuel breaks. The goal of this treatment is to remove understory vegetation to reduce fuel loads and stop fire from spreading, but it is likely to also alter plant species richness and abundance. Research has shown that invasive species are more abundant in disturbed ecosystems, and we predicted that the shaded fuel breaks would provide open niches for them to compete with native species. We tested this hypothesis by surveying the boundary of Wild Basin Wilderness Preserve, outside of Austin, TX, and comparing areas where these treatments had been applied to control plots. We aimed to: (1) identify whether and how the plant diversity and abundance responded to the shaded fuel break, and (2) whether the treatments facilitated the spread of invasive species. We surveyed four mitigated and 4 controlled sites, recording understory vegetation, canopy cover, and categorized data as invasive or native species. We found no significant difference in the percentage of invasive species or plant species richness between the controlled and mitigated sites. However, relative abundance of invasive species was significant. We identified two types of invasive species growing at our sites: Waxleaf privet (Ligustrum japonicum) and Heavenly bamboo (Nandina domestica), which are common ornamental plants in the region, while the rest were categorized as native. This research will help inform land managers in the region about the possible unintended consequences of shaded fuel breaks by providing more insights regarding vegetation management.



NATALIE TURNER

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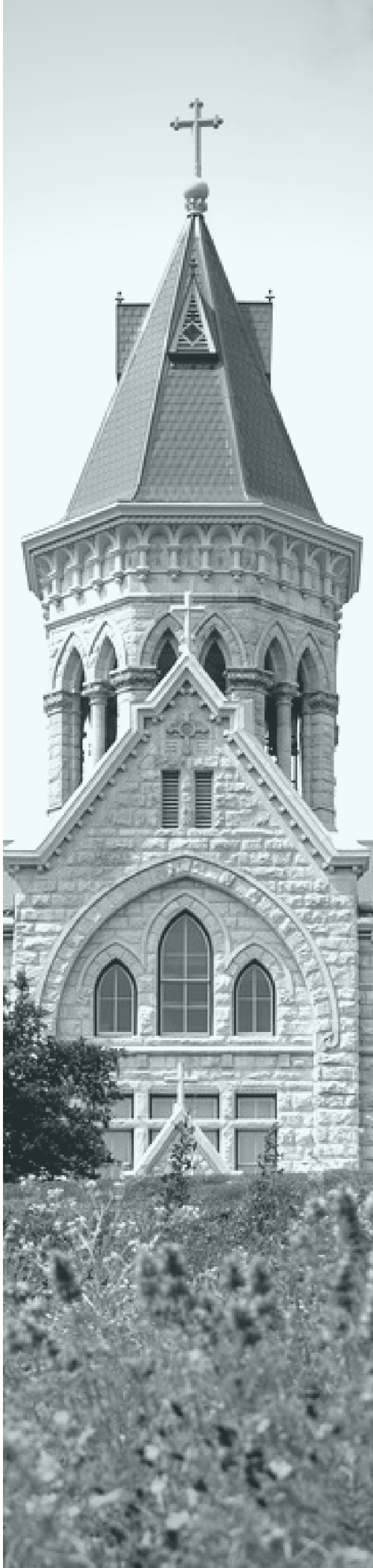
CARBON SEQUESTRATION IN NATIVE ASHE JUNIPER AND INVASIVE PRIVET FORESTS OF THE TEXAS HILL COUNTRY

Atmospheric carbon levels continue to rise globally from greenhouse gases (GHGs) such as carbon dioxide (CO 2) due to anthropogenic activities. As climate change has become an increasingly more pressing issue, there have been consolidated efforts to curb its effects and slow its growth. A natural mechanism to mitigate increased CO 2 emissions involves managing forests to increase the amount of carbon (C) that they pull down from the atmosphere and store in soils and biomass. Efforts to maximize the C storage rely on accurate estimates of C stored under forest ecosystems of different age, composition, and management, but these data are often lacking. This study sought to compare C storage in native Ashe juniper-live oak forests with that of invasive privet forests within the Texas Hill Country and the City of Austin. Tree and soil C data were collected at 8 native and 8 invasive forested sites located in the Balcones Canyonlands Preserve, a private ranch, and several City of Austin Parks on a range of different soil types. We quantified and compared soil organic matter and basal area of trees as a proxy for total carbon stored, and averaged by forest type. Our preliminary results suggest little difference in carbon storage in soils between the two forest types, but higher carbon in biomass of the native Ashe juniper forests. These results can be used to inform local land management policy seeking to maximize C storage in Central Texas.



CONTENTS

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REFRAMING MESTIZAJE: AN IDEOLOGICAL CRITIQUE OF MESTIZA CONSCIOUSNESS IN ANZALDUA'S BORDERLANDS

This project is an analysis of the rhetoric employed in Gloria Anzaldua's *Borderlands* and her explanation of Mestiza Consciousness, which has been significant in defining Latinx identities along the Border. This analysis and itemized ideological critique serves to fill the gaps in knowledge and understanding that many people have about Latinx identities and culture in relation to Indigeneity and Blackness. This critical endeavor is an ideological critique and analysis of Mestizaje and Mestiza Consciousness, the way that it is an extension of anti Indigenous/anti Black rhetoric, white supremacy and how these ideals work in tandem with each other in Mexican-American Border Culture and how Mestizaje serves primarily as a nation building ideology as opposed to focusing on lived experiences and intersectionality. Having read *Borderlands* a few times in a variety of courses here at SEU has allowed me to to critically assess this text through a variety of lenses and have a more rounded understanding of this text and the real world implications it has. Additionally, having lived many of the experiences Anzaldua has written about in *Borderlands* allows me to analyze from a unique first-hand perspective. I consulted the work of a variety of academics in various fields who have written extensively on this topic and have a more nuanced take than I have. This research is ongoing. In brief, *Borderlands* and the concept of Mestiza Consciousness lacks an intersectional framework to draw from and is blind to the implications Mestiza rhetoric has on Indigenous and Black communities.

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MARY BRANTL

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Associate Professor of Art History

CASE STUDY ON CULTURAL REPATRIATION—CLAIMING RETURN FOR DUNHUANG'S CULTURAL TREASURES

This case study on the repatriation of Dunhuang's cultural property is a part of my independent study on contemporary art and the law. To me, Dunhuang's cultural meaning is tantamount to that of the Elgin Marbles for the Greeks. Born and raised on Mahayana Buddhism and the history of the Silk Road, Dunhuang is my "Mecca". The Mogao caves in Dunhuang are known for their Buddhist fresco paintings, many predating 500 C.E. Located at the east end of a historical trade route, the Silk Road, the caves used to guard Dunhuang's hidden cultural treasures. Besides functioning as a trading center, Dunhuang was also a pilgrimage site for the faithful. In the declining years of the Qing dynasty, several explorers from Britain, France, and America took vast amount of Dunhuang's manuscripts, some sculptures, and even sections of cave paintings out of Dunhuang to the west. Today, the lost cultural treasures of Dunhuang are scattered around the world. The only in-situ institution, the Dunhuang Academy, has been collaborating with the world's cultural institutions to better the conservation conditions on site. Reflecting on the history of Dunhuang from a post-colonial viewpoint, my research attempts to reclaim the lost cultural treasures for the Dunhuang Academy. After exploring historical and moral grounds, I here concentrate on possible legal arguments. Considering different juristic systems around the world, my research also allows me to get a taste of international comparative law, something with which, as a soon-to-be law student, I hope to engage in the near future.

DEANNE CRUSE

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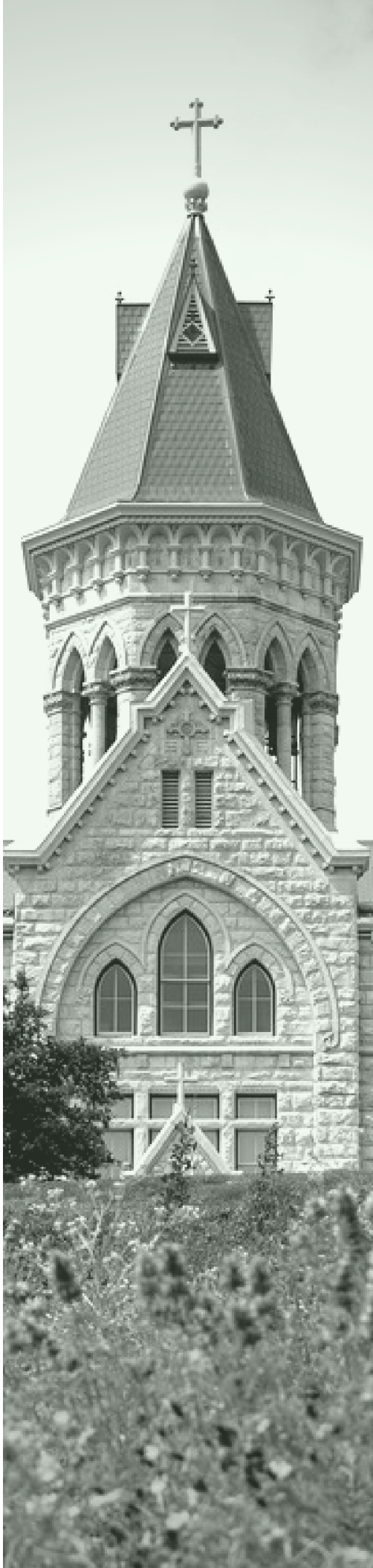
KELLEY COBLENTZ BAUTCH **FACULTY**

Professor of Religious and Theological Studies

THE DAO DE JING : THREE PERSPECTIVES FROM AROUND THE WORLD

This paper examines the enduring significance of the Dao de Jing for diverse contemporary communities. The Dao de Jing is widely believed to have been written by a contemporary of Confucius, who is known simply as Laozi, over 2000 years ago; the book, a collection of 81 philosophical poems, is foundational for Chinese Buddhism, Daoism, and Neo-Confucianism. The Dao de Jing has achieved, however, global recognition and is used today in a variety of contexts. In this paper, we examine three of these distinctive contexts. Scholars in the field of Business promote the Dao de Jing's teaching on frugality and contentment. Within the field of education, pedagogy experts emphasize how the Dao teaches compassion for each student's unique qualities. Lastly, readers of the Dao in the United States emphasize the tradition's focus on self-determination.



ANNALYSE GRANOWSKI

English Literature Major
Writing and Rhetoric & Psychology Minors

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ALAN ALTIMONT

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SAINTLY SINNERS: REPENTANT WOMEN IN EARLY CATHOLIC LITERATURE

How might literary representations of women, created by men's narratives that inherited misogynistic views, frame both virtuous and sinful women in a positive light? Sexist views were prominent in both the Church and the secular society, which resulted in women being in subservient positions. However, even though the Middle Ages inherited these views from the Late-Roman period, some women still were depicted as role models. Two Churchmen, Saint Augustine (354-430, C.E.) and Marbod, Bishop of Rennes (1035-1123, C.E.), offer complex perspectives in their writings, where they diverge from the patriarchal ideas, and they praise certain women. The advancement of women initially is seen in *The Confessions of Saint Augustine*, where the example of faith and devotion in his mother affects him and encourages him to convert to Catholicism. Unintentionally, St. Augustine's narrative may have influenced Marbod, who elevates all repentant women. He praises the female capacity to learn and practice proper morals quickly. Specifically, he represents this in his fictional poem, *The Life of Saint Thais*, where a sinful woman earns redemption and establishes a better understanding of God's forgiveness than the monk who harshly punishes her. Feminist theory will be applied from Elaine Pagels's book, *Adam, Eve, and the Serpent* (1988), to demonstrate that these narratives offer a complicated but progressive views for these two women. In some ways, St. Augustine and Marbod are elevating and advancing women as guiding figures for Early Catholic societies.

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INTERACTIONS BETWEEN TECHNOLOGY AND SOCIAL ISSUES

This project analyzes the created discourse and flow of information in the rhetorical ecology surrounding the viral video and popularized Instagram posts about the nicknamed "MAGA teens." The viral video is of an altercation between teens wearing MAGA hats surrounding a Native American man, Nathan Phillips, at a march for Native American ancestry in Washington. The students in the video were all visiting on a school trip from Covington High School, in Kentucky. In the video we see one of the students coming face to face with Nathan Phillips, smirking as his friends crowd around the both of them in what appears to be a threatening manner and yelling remarks. What is important to remember about these original Instagram posts is the actions of the exchange are in shaky video format with limited information or knowledge about the actors involved. The main actors involved are Nathan Phillips and the MAGA teens, as well as anyone else featured in the hundreds of videos of the march, all of whom have the potential to affect the interactions within the ecology. Eventually, social media and news outlets would become involved actors as well. The division of labor within this ecology was divided between the audience and publishers because anyone on social media could be publishers or commentators, anyone can inform ill-informed opinions into the ecology. I hypothesize that if this event had been found first by a news source or a form of respected media, such as The New York Times or The Washington Examiner, there would be less confusion and opinions based on the matter of who the victim or the villain is.

ISABELLA HAMM

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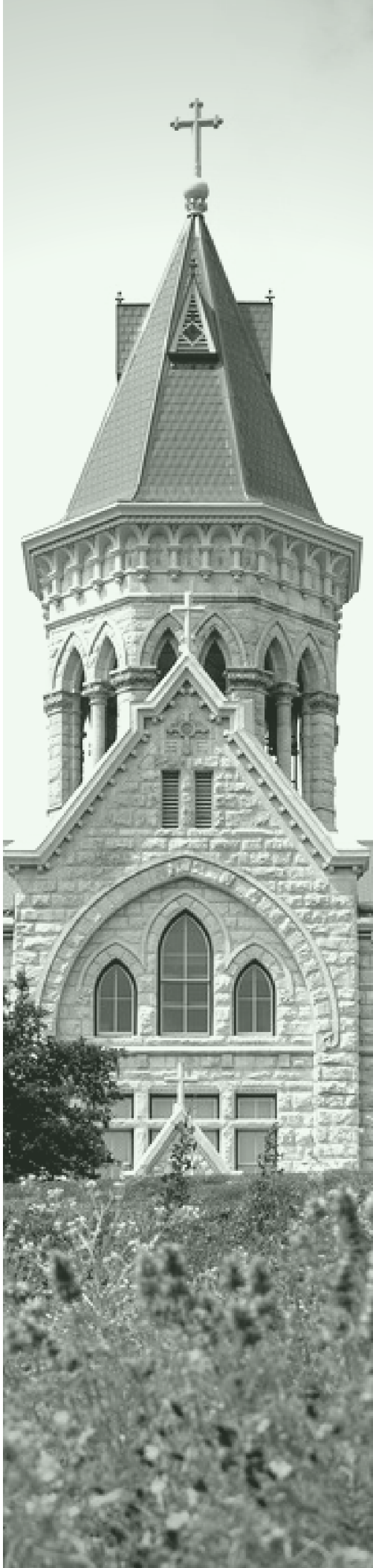
EMILY BERNATE **FACULTY**

Assistant Professor of Spanish

AFRICAN AMERICAN VERNACULAR ENGLISH AS A LEGITIMATE LANGUAGE

Following a decision made by the Oakland, California School Board in 1996 to recognize African American Vernacular English (AAVE) as a legitimate language, the topic has surfaced with a significant amount of debate and controversy. The question being: Is AAVE its own language or is it an oversimplified corruption of standard American English? After an extensive investigation, it is my conclusion that AAVE is in fact a legitimate language. I make this claim predominantly based on three pieces of evidence that I have gathered through my research. Firstly, AAVE can be considered legitimate because it follows logical and consistent grammar patterns, which are distinct from the grammatical patterns followed by standard American English speakers. Secondly, AAVE can be legitimized as a language due to the sub-dialects which exist amongst speakers. And finally, what truly distinguishes AAVE as a legitimate language is its recognition. As demonstrated, for example, by the school board in Oakland, AAVE has been recognized amongst various communities as being a legitimate language. The importance of language recognition here relies on the impact it has on the community of speakers. Therefore, acknowledging AAVE has become crucial within the public school system, as a lack of awareness has led to the inability of minority school systems to provide equitable educational opportunities to all students.



JILLIAN HORTON

Writing & Rhetoric Major
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MICHAEL YANG **FACULTY**

Instructor of Creative Writing

WEDDINGS AREN'T SO BLACK AND WHITE: THE BRIEF DISCUSSION OF A CREATIVE WORK

"Rotten Apples" is an exploration of frustration. The concept for this story came to me as I realized I dreaded extended-family functions, because I have a large family with several members who are incredibly prejudiced against almost every type of person. I was facing the idea that while my entire family wasn't comically horrible and uninformed, parts of it were: there were select people who could ruin all of the fun of a party regardless of the conversation, event, or time. It's incredibly difficult to want to attend a wedding where you know there will be a concentrated infestation of roaches. But if there are kind and redeemable people also attending this wedding, does that justify the roaches? I balled up my frustrations about this issue and concocted a creative outlet for it, which became "Rotten Apples." This story follows a boy named Wandel and his eccentric cousin Jordan as they witness an unusually polarizing, somewhat paranormal event at a large family function. Did I mention it's a wedding? During this presentation, I would like to explore my thought process behind creating this story, and the close connection between an author's mental state and what they choose to write about.

TAYLOR HUEY

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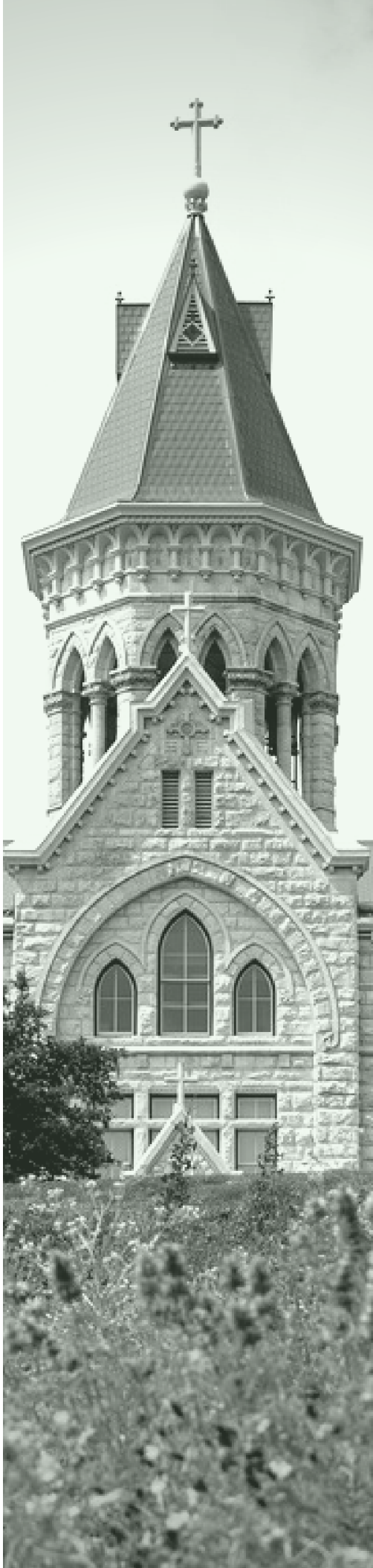
Professor of Religious and Theological Studies

"THE DEHUMANIZATION OF HUEY P. NEWTON": REVISITING MYTHOLOGIES AND THEIR IMPLICATIONS FOR THE BLACK PANTHER PARTY

Huey Percy Newton's legacy is one shrouded in mystery and myth. Among supporters, he is considered a hero of Black folklore, remembered for advocating for marginalized groups' advancement. To his adversaries, he represents little more than a violent and radical troublemaker. However, rarely was he ever considered what he truly was: a man. In this paper we consider first the dehumanization of Huey P. Newton in regards to his vilification, next we consider his deification at the hands of his allies, and finally we evaluate the ways in which both led to the misremembering of the Black Panther Party.



GIANNA LIGOTINO

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MARY BRANTL

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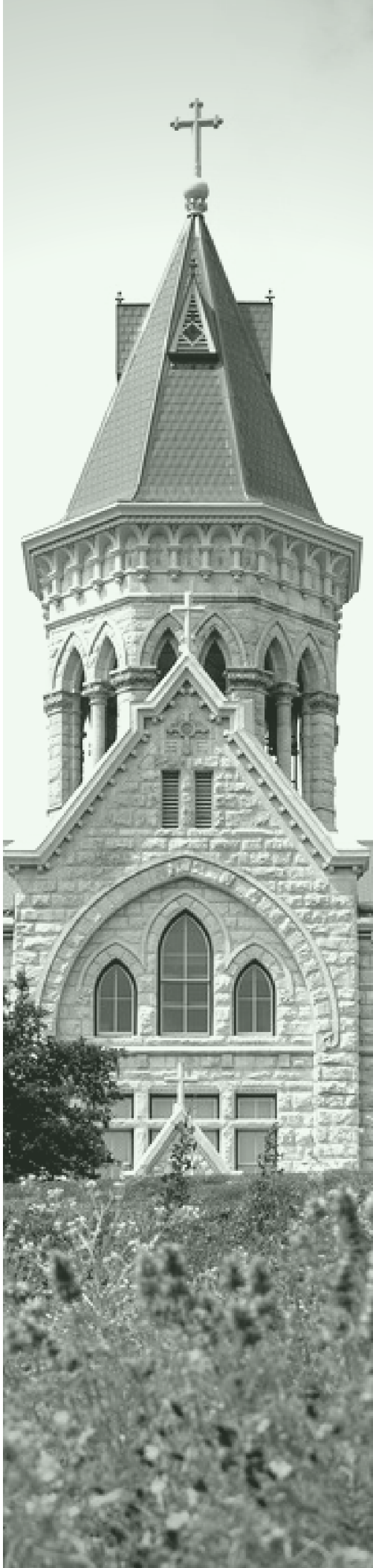
Associate Professor of Art History

PERLE FINE AND SONJA SEKULA: REDEFINING THE ABSTRACT EXPRESSIONIST NARRATIVE

In the period of Abstract Expressionism in the United States, women were largely regarded as afterthoughts in a movement consisting more notably of the hyperbolic masculine personalities of artists like Barnett Newman and Jackson Pollock. Women often received little success in comparison to their male counterparts, and the "success" they did receive often came from years of fighting for their own space and a looking back, by art historians in the present, to the history of Abstract Expressionism. It is in the two artists to be discussed in this paper, Perle Fine and Sonja Sekula, that one can see how, in conjunction with the constant fight for space, female artists of Abstract Expressionism had to rely on each other and their work to make a name for themselves. However, this paper is an attempt to show how these women were artists who worked beyond the externally imposed label of "female artist" or "woman artist," and in turn developing powerful stylistic imagery to represent their voices. Through the artistic biographies of Perle Fine and Sonja Sekula in their years associated with the Betty Parsons Galley, this paper will show how individual perspectives and artistic influences helped to shape their respective works as abstract expressionists and how, in their time, recognition came either not at all or frugally only as of the result of ardent individualism/non-conformity, as in actuality neither artist will really be recognized until just recently.



LEON LINAM

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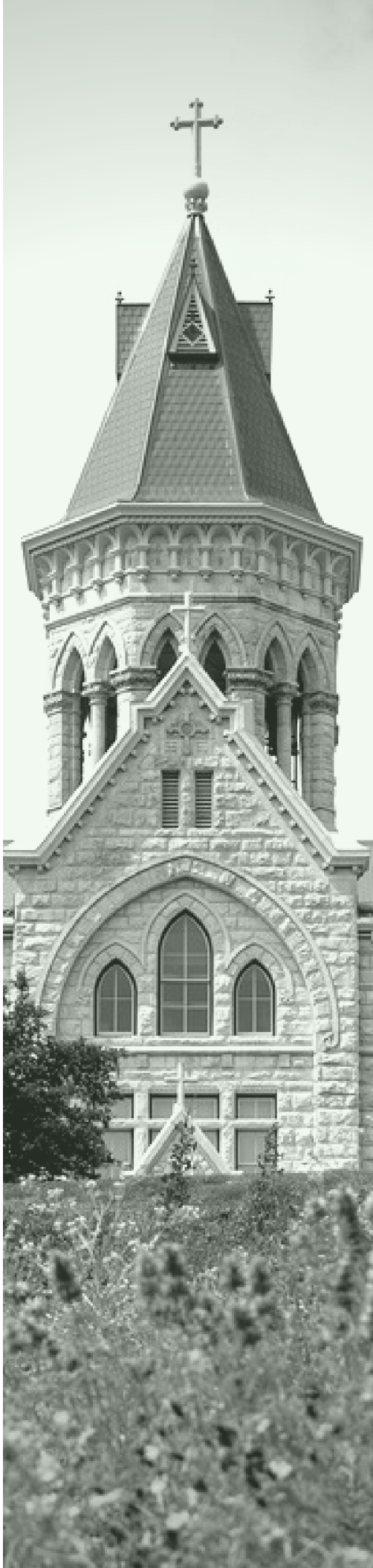
TIMOTHY BRAUN **FACULTY**

Visiting Assistant Professor of Creative Writing

FIGHTING OPPRESSION AS TOLD THROUGH LEON LINAM'S "THE ESCAPED EXPERIMENT"

What does one do when they are stuck? During this session excerpts of The script The Escaped Experiment will be read, and will be expanded upon on how it addresses the following: The Escaped Experiment was created in response to things being incredibly out of one human's control, especially when this human belongs to several consciously oppressed groups. In order to address these frightening realities that are incredibly close to current times, this script combines science fiction and theatre, which despite science fiction's popularity on screen, isn't often seen on the stage. The unknown is beyond the four walls of the institution the main character, Unit P-17, is trapped in. They refuse to accept that they must stay trapped by the forces that seek to control and fix them. This holds a mirror to this reality's history of constant oppression of marginalized groups. There is an unfortunate constant need for individuals to stand up and break the systems that are working against them. This play is a love letter to activists. This play is also a hand reaching out to those who are currently trapped, letting them know that they are strong enough to break free.



EVA McNABB

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KELLEY COBLENTZ BAUTCH **FACULTY**

Professor of Religious and Theological Studies

GOD IS A WOMAN: THE BIBLICAL FIGURE OF WOMAN WISDOM AND THE DIVINE FEMININE IN THE CHRISTIAN TRADITION

I grew up Christian in both Roman Catholic and a Protestant churches. In both contexts, I grew up with the assumption that God was male. The images of the divine I was exposed to were that of God the Father, God the Son, and God the neutered Holy Spirit. It was not until I grew older that I began to conceive of the possibility of feminine pronouns and imagery being attributed to God. Could God be conceived of as a mother, who gives birth to and nurtures the universe? Could the Holy Spirit be spoken of with feminine pronouns? When I got to college, I discovered a distinctly and explicitly female image of God in our very own Hebrew scriptures. Her name is Woman Wisdom, in Hebrew "Chokmah", in Greek "Sophia", in Latin "Sapientia". She is a mythological figure who appears most prominently in the books of Proverbs, Wisdom of Solomon, and Sirach, but references to her are sprinkled throughout both the Old and New Testaments. She is spoken of as a divine gift of God the Father, begotten of the Father, present with the Father at the beginning of time, and active in the work of creation. If this language sounds familiar, it is because parallel language is used to describe the Christological Logos - the person of Jesus Christ, the Son of God. So if this female mythological figure has so many similarities with the divine savior of the Christian faith, why had I never heard of her? Why has the divinity of Woman Wisdom been historically downplayed in the Roman Catholic tradition? And what are the implications of reclaiming such a figure? What impact could it have on how Roman Catholics understand the divine feminine and the role of women in the faith? These are the questions I investigate in the narrative context of a theatrical play. My final product is an artistic piece devoted to the biblical figure of Woman Wisdom, the divine feminine in the Judeo-Christian tradition, and the ongoing conversation around gender in the Roman Catholic Church.

VICKY ORTEGA

English Literature Major
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SASHA WEST **FACULTY**

Associate Professor of Creative Writing

CREATION, CONNECTION, AND EXPERIENCE: bones of the reaping harvest

bones of the reaping harvest is a chapbook I produced for my Poetry II Workshop course. I've always had a deep connection with the ground as it is where I feel the closest and farthest away from my ancestors and home country of Guatemala. Therefore, in my chapbook I strove to explore memory and death in relation to the question: where does the collective memory of violence exist once a body is buried in the ground? In the process of creating my chapbook I consulted several poet and text mentors for craft and structure. *bones of the reaping harvest* consists of fourteen poems interweaving three speakers tied to a body's violent death: a body learning what it means to be buried in the ground; a malefactor; and bones, representing a collective memory of colonial violence seeking to be unearthed. In connection with the structure of progression from my mentor texts, the chapbook also interweaves various rhythms and tempos, reflecting cyclical cycles of a seed germinating, a tree growing, and the discovery of the past; all of which come together in a universal connection to death, memory, and the ground. Through these larger connections, *bones of the reaping harvest* became a way for me to create a personally crafted poetic experience of trying to understand the larger narrative of violent acts which are silenced by the deaths of victims and/or written out of history. I will be presenting the cycle I took in producing this work of creation, connection, and experience as symbolic of the cyclical rhythms woven throughout my chapbook. Creation and connection are the interweaving threads of craft elements and the dialogue with my text mentors in my chapbook; experience is the culmination of my creation and connections within it.

CALISTA ROBLEDO

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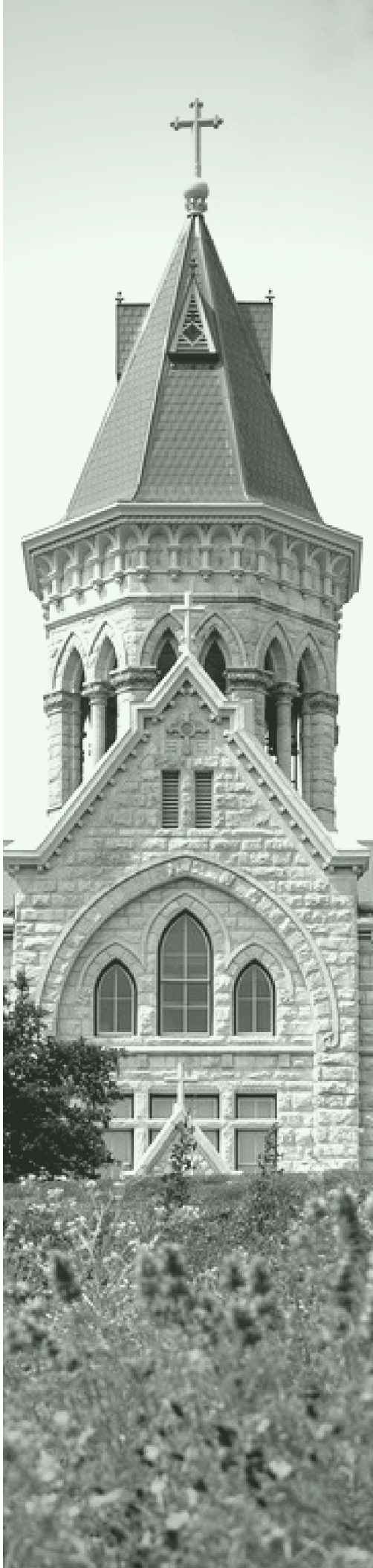
TIMOTHY BRAUN — FACULTY

Visiting Assistant Professor of Creative Writing

A SIGN OF THE TIMES: THE SPOKEN BALLET OF DREAM LAKE

The Spoken Ballet of Dream Lake is a one act play I wrote in my Playwriting I workshop course. This play showcases how society views and treats young women of color. The development of this work occurred in three phases or three acts. Act I consisted of the early months of the Covid-19 pandemic, and the revival of the Black Lives Matter movement while I was living at home with my family, shaping the core of play. As fall semester began, I entered a workshop environment for the first time. This course allowed me to explore my voice as a playwright and home into what I truly needed to say to tell this story. From a meditative writing exercise to reading the Pixar Rules of Writing, Act II molded how I approached this project. Once midterms arrived, I began to think more about my characters. What do they hold sacred? What do they care about? In brainstorming I realized my characters hold sacred and care about the same things I care about. That is, their relationships with their families and friends-- the people in their lives are everything to them. Through a series of workshops with my peers and notes from Professor Braun, T*he Spoken Ballet of Dream Lake*, an adaptation of the ballet *Swan Lake*, tells the story of young women who, with the help of unexpected strangers, fight against the injustices they experience in this magical realism setting.



CHLOË SEMINET

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EMILY BERNATE **FACULTY**

Assistant Professor of Spanish

FRENCH HERITAGE IN LOUISIANA: CULTURES DIVIDED

Louisiana and their pride for their cultural heritage has given them national popularity. This research aims to provide a description of the traditions, values, and cultural heritage associated with the Cajun identity as well as its origins. An additional focus of this analysis will address the Creole culture and its orientation in Louisiana as separate from Cajun culture by evaluating the two culture's similarities and differences. Through investigating the Cajun tradition, tactics of oppression employed by an imposed standard for an English-only America will be disclosed and debunked. It is impossible to address Cajun identity without also giving credence to Creole culture. Creole and Cajun were once a way of identifying two types of natives in an area (regardless of race) that then came to develop a rich culture. However, after the Civil War, racial segregation led to racially divided cultures with Cajuns being primarily white and Creoles black or mixed race. Thus the Cajun "white" identity has been promoted and privileged at the expense of the Creole population for whom asserting regional identity has been challenging and met with racial prejudices. Research indicates that while some natives identify as both Creole and Cajun, most Creoles agree that in defining Creole, Cajun must be excluded. Since the Cajun revival of the 1960's, Cajun labels have been assigned to items like boats and coolers while Creoles have been neglected. Creole people would like more opportunities to be celebrated as a culture that is distinct from Cajun culture which is why it is both relevant and respectful to consult each individually.

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STEVEN FLETCHER **FACULTY**

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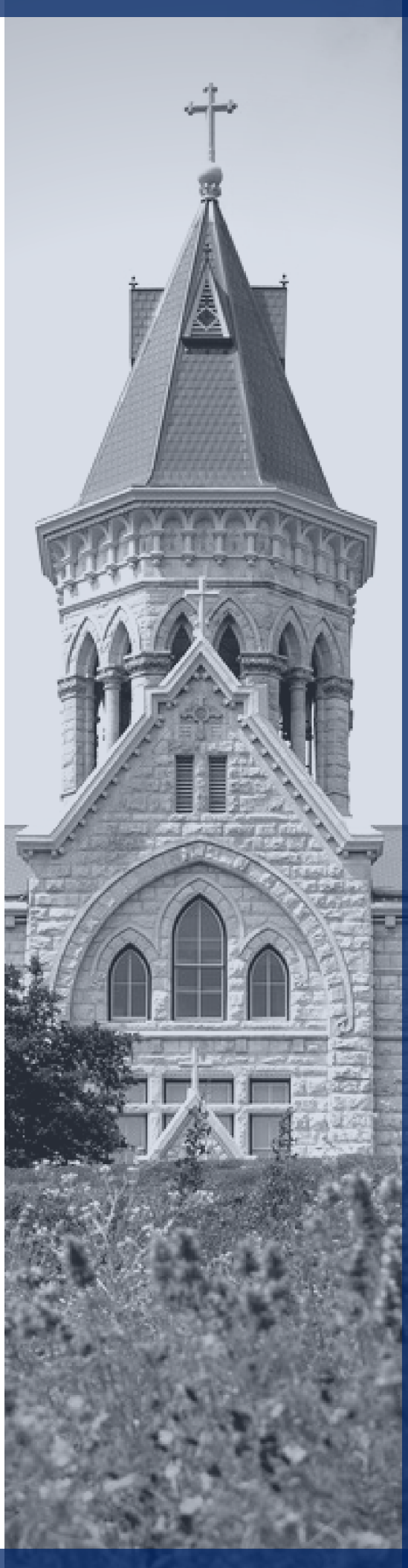
THE DAY YOU BEGIN: SIMILARITIES WITHIN DIFFERENCES

This narrative analysis was written to highlight the themes of racial exclusion, economic status, and disability within Children's Literature. Children's Literature is traditionally viewed as a censored, more simplistic version of literature. The children's book I chose to analyze, *The Day You Begin*, showcases harsh realities of society. Children who are sheltered from society enter a world where they realize they're different. This book teaches children that they have characteristics that are different but that they must embrace their differences to find peace. I began this narrative analysis by identifying non-fiction narratives with similar situations of exclusivity that led to disturbing consequences. Within the book, I studied the words as well as illustrations and how they worked together to convey this message to an anxious child. Through this research I found that it's necessary to educate discrimination and seclusion at a young age. Racial injustice and violence has been prevalent over the past year and it's necessary that children are taught to recognize and embrace differences. Children will learn that their differences are what brings them together and with that comes acceptance and friendship. This narrative analysis is significant because it disrupts the previous knowledge that Children's Literature is simple and superficial. It allows the reader to understand that Children's Literature is progressive and teaches harsh realities in a way that's structured with tenderness.



ST. EDWARD'S UNIVERSITY