2021 Austin College

Departmental Honors
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Honors Nominees 2021-2022

Alpha Chi Membership

Phi Beta Kappa Membership
Special thanks to those who have made the 2020 – 2021 Honors Program at Austin College possible:

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Cancers are identifiable by the demonstration of ten hallmarks, such as increased proliferation and capacity for metastasis. Proteins contributing to multiple hallmarks are generally more likely to be altered by mutation in cancers making them appealing targets for the development of chemotherapies. One such protein affecting multiple hallmarks is c-Myc, a transcriptional regulator involved in growth, proliferation, metabolism, and differentiation. Meta-analysis of gene expression data indicates a correlation between cellular levels of c-Myc and the proteasome activator PA28γ in multiple cancers. Recent studies have demonstrated contradicting roles for PA28γ in regulating c-Myc’s cellular abundance, with one study indicating that it degrades c-Myc via the ubiquitin-independent proteasomal protein system (UIPPS), and another indicating that it stabilizes c-Myc via an unknown mechanism. This project investigated the relative importance of the ubiquitin proteasome system (UPS) and the UIPPS in regulating c-Myc’s stability in cancer. Using normal and cancer cell lines expressing differing amounts of PA28γ, I identified a correlation between elevated PA28γ expression and increased c-Myc levels in breast cancer. Increased c-Myc levels, however, are not due to alterations in UPS-mediated c-Myc degradation nor alterations in UIPPS function alone. Therefore, further analysis of PA28γ function in these cells is required to determine its viability as a chemotherapy target.
MacKenzie Lane Bolen

Hometown: Dallas, Texas

Major: Neuroscience

Future Plans: Mack plans to pursue a Ph.D. in Biomedical Science with a concentration in Neuroscience at the University of Florida School of Medicine

Thesis Director: Dr. Renee Countryman

Committee Members: Dr. Kelli Carroll & Dr. John Richardson

Thesis Title: *An Analysis of Salivary Tau and S100B as Biomarkers for Sports Related Mild Traumatic Brain Injury in Asymptomatic Division III Football Players*

On average 3.8 million sports related concussions occur annually in the United States (McKeithan et al., 2019). However, this number is likely an underestimation due to the fact that many concussions are not reported. There is a clear socioecological pressure felt by athletes as well as coaches to quell sports-related mild traumatic brain injury (SRmTBI) and subconcussive blows (SCB) admittance and/or reporting (Baugh et al., 2014; Kroshus et al., 2014). However, there is no current objective mode of testing that circumvents subjectivity of brain injury reporting while also accurately and quickly diagnosing this complex injury. Due to this lack of objective testing many players continue to play through an injury and sustain compounded blows. If sustained over a long period of time, these repeated compounded blows can lead to long-term neurodegenerative disease like Chronic Traumatic Encephalopathy (CTE) (McKee et al., 2014). Previous researchers have validated the use of blood and cerebrospinal fluid as biomarkers of brain injury; however, these sample types are relatively expensive and not easily collected (Narayana et al., 2017). The purpose of this study is to identify an objective mode of diagnostic testing in order to more frequently and accurately identify SRmTBI and SCB in athletes. In specific, this study measured the correlation between salivary S100B and Tau concentration via ELISA with reported head trauma in collegiate football players (N = 20). There was a significant correlation between Tau concentration and diagnosed brain injuries after a noncontact practice (p = 0.002) and a contact scrimmage (p = 0.03). These findings suggest that Tau increases as a result of brain trauma and that this protein can be measured from in vivo salivary samples.
Tallgrass prairie is characterized by a grass dominated landscape with a large forb variety and very few shrubs and trees. Almost all the tallgrass prairie in North America has been lost to agriculture which produces less ecosystem services: ground water absorption, soil accumulation, carbon sequestration, etc (Rowe 2010). Prairie ecosystem benefits have led many to see the gain from prairie restoration. Prairie restoration is the attempt to convert land back into its natural ecosystem of grasses and forbs with minimal trees. I will investigate the restoration progress of Sneed prairie (formerly a farm) in Sherman, TX using multiple methods not previously applied systematically at this location. Initially, I will complete an in-depth terrestrial vertebrate (small mammals & herpetofauna) and invertebrate census. Then I will compare the small mammal species found at Sneed to those found at the Lyndon B. Johnson National Grassland field location of National Ecological Observation Network (NEON). I will use the LBJ National Grassland small mammal trapping data as a reference to assess the restoration progress of Sneed, while considering general differences between the locations. The field treatments at Sneed (prescribed burning, grazing, and mechanical management) will allow me to compare the species present in each field treatment type and identify if a certain type of prairie management is associated with higher diversity or abundance of vertebrate populations.
Makayla D. Dunlap

Hometown: Garland, Texas

Majors: Psychology & English

Future Plans: Makayla plans to attend Graduate School for a Master’s in Publishing

Thesis Director: Dr. Danielle Franks

Committee Members: Dr. Thomas Blake & Dr. Henry Gorman

Thesis Title: The Effect of Race on Stigmatization of Drug User’s

Black males in the United States are disproportionately represented in justice systems. Black youth, comprise approximately 15% of their age group, but they represent roughly 25% of all juvenile arrests and 40% of all incarcerated juveniles (Jones & Poe-Yamagata, 2000; McCord, Widom, & Crowell, 2001). Additionally, previous research has indicated that healthcare employees don’t prioritize the cases of drug users (Van Boekel et al., 2013). Researchers in this study argue that healthcare workers see these individuals as making a choice, and, therefore, they do not work as diligently on these individual’s cases. Despite these previous results, multiple gaps in this literature remain. The first of these is that very few studies have examined the perception of substance use concerns among a younger adult population. In addition to this, none of the available literature investigates how other belief systems may impact this relationship. Therefore, the current study will also examine the role of Just World Beliefs and how they relate to substance use stigmatization. Participants were randomly assigned to one of three vignettes. Each vignette details a young adult male who struggles with substance use, however the race of the young male varies. After reading the vignettes, participants were asked to complete the Perceived Stigma of Substance Abuse Scale (PSAS; Luoma et al., 2010), the Global Belief in a Just World Scale (GBJWS; Lipkus, 1991) and a series of demographic questions. It was hypothesized that participants will hold more stigmatizing attitudes towards Black users in comparison to White users and a race-neutral control, and that Global Beliefs in a Just World will mediate the relationship between the participant’s race and stigmatizing attitudes. After analyzing the data of 54 participants, this study yielded no significant results for either hypothesis. Implications and recommendations for future research are discussed.
Mandy Raine Eckhardt

Hometown: Sulphur Springs, Texas

Major: Biology with a Concentration in Cellular and Molecular

Future Plans: Mandy will pursue a Ph.D. at the UT Southwestern Graduate School of Biomedical Sciences

Thesis Director: Dr. David Aiello

Committee Members: Dr. Kelli Carroll & Dr. John Richardson

Thesis Title: Understanding the relationship between the transcriptional activator Cmr3 and its potential targets in the viability of the Saccharomyces cerevisiae pgm2Δ mutant

Phosphoglucomutase (PGM) is an enzyme responsible for the interconversion of the metabolites glucose-1-phosphate (G1P) and glucose-6-phosphate (G6P) in Saccharomyces cerevisiae. A mutant yeast strain lacking PGM2, the major isoform of PGM, exhibits several defective phenotypes when the cells are grown on galactose media. These phenotypes include slow growth, high levels of G1P relative to G6P, and increased Ca2+ uptake and accumulation. EMS mutagenesis was utilized to isolate mutant alleles that rescue pgm2Δ growth defects. SPT4, which encodes a transcription elongation factor, was identified through this screen. All calcium related phenotypes observed in the pgm2Δ mutant are rescued in the pgm2Δspt4Δ double mutant. We undertook an RNAseq analysis with the goal of identifying candidate genes that show differential expression between the wild type and pgm2Δspt4Δ strains relative to the pgm2Δ strain. Such candidates may contribute to pgm2Δ mutant phenotypes, or mediate rescue in the pgm2Δspt4Δ strain. Analysis of this dataset suggests the pgm2Δ mutation causes cells to hyperactivate a variety of cellular stress response pathways. Further, the DREME analysis tool has identified the transcriptional activator, Cmr3, whose binding sequence shows increased representation in the promoters of genes exhibiting differential expression between wild type, pgm2Δ, and pgm2Δspt4Δ strains. The pgm2Δcmr3Δ strain shows slower growth on galactose media, indicating that CMR3 likely contributes to the viability of the pgm2Δ mutant. Eight genes have been identified that have increased gene expression in the pgm2Δ mutant and are potentially regulated by Cmr3. Knockout phenotypes indicate PTP2 plays a major role in contributing to pgm2Δ viability, while SIP18 and SSE2 play minor roles in contributing to pgm2Δ viability. Conversely, PAI3 may minorly exacerbate pgm2Δ viability. Chromatin immunoprecipitation initially suggests PHO89 and SIP18 show increased Cmr3 recruitment to their promoter regions, indicating they may be transcriptionally activated by Cmr3. A model based on this data is presented predicting specific genes and proteins involved in the hypothesized hyperactive stress response in the pgm2Δ mutant.
Leslie Elaine Erwin

Hometown: Fort Worth, Texas

Major: English Creative Writing

Future Plans: Master of Arts in Teaching with the Austin Teacher Program

Thesis Director: Dr. Meg Brandl

Committee Members: Dr. Lisha Daniels Storey & Dr. Julia Shahid

Thesis Title: The Secret I Was: A Novel

When 15 year-old Princess Margo befriends the new guard, Callie, she begins to realize there are secrets being kept throughout the castle about who Margo really is. Guided by her tutor, Peony, Margo begins to study the history of the royal family and learns just how vulnerable the kingdom is. As Margo and Callie grow closer, conniving Nurse Sloane works to protect the castle’s hidden truths at all costs. Intended to suit young adult readers, The Secret I Was showcases the difficulty of navigating a disorganized and prejudiced system of power, represents the impact of damaged leaders, and strikes a balance between seeking friendship and learning to be loved by others.
Researchers recently began to study academic entitlement (AE). An established concept that interests researchers is implicit mindsets. Another novel construct may result from implicit mindset and predict AE. We term this construct perceived academic discrepancy (PAD), and define it as a student’s perceived discrepancy between grades and ability. The first goal of the study was to assess the validity and reliability of the PAD scale we developed. We hypothesized that AE would be positively correlated with fixed mindset and PAD and that participants with a growth mindset, regardless of PAD level, would be low in AE. 133 undergraduates participated. Surveys measured AE, implicit mindsets, attitudes towards cheating, PAD, and ability/effort attributions. The PAD scale had a Chronbach’s alpha $\alpha = .899$ and demonstrated concurrent validity with assessments of actual vs. deserved grades. The hypothesis that PAD and AE would be positively correlated was supported ($r = .300, p < .001$). The hypothesis that those with a growth mindset would believe that ability and effort were positively correlated was supported ($r = .274, p < .001$). Participants in the high AE group scored higher on PAD and were more accepting of cheating behaviors than those in the low AE group ($t(83) = -3.298, p = .001$; $t(83) = 1.715, p = .090$). Participants with a fixed mindset scored higher in AE and PAD than those with a growth mindset ($t(115) = -2.214, p = .029$; $t(115) = -2.950, p = .004$). Primary study hypotheses were supported. AE and implicit mindset theoretically align and appear to be related. The new construct of PAD, which is both theoretically related to and theoretically distinct from academic entitlement, provides a valuable addition to the literature.
Zoe Helen Garrett

Hometown: McKinney, Texas

Majors: French & Environmental Studies

Future Plans: Law School

Thesis Director: Dr. Colin Foss

Committee Members: Dr. Stacey Battis & Dr. Karánn Durland

Thesis Title: Ecocritique in French Literature

The study will investigate the interdisciplinary connections between Environmental Studies and French and Francophone Literature. The intersection between these disciplines represents a newer field of research in which literature helps show different ways that the environment is viewed and how it should be viewed. In the 19th century, romantic thought shifts towards post-colonial or revolutionary thoughts which shows the shift from a view of the environment as nature untouched by humans, a concept which is impossible because as people perceive nature they are interacting with and changing it, to a view of the environment as a symbol of their interconnectedness with the natural world. My study will show European narratives of the conquest of natural places contrasted with postcolonial narratives which critique how colonization and industrialization harmed both the people and the land where they lived. Reading for this study reminded me that literature is unburdened by the limitations of the real world, which allows it to be a tool that allows people to imagine what could create a better future and a better relationship with nature. This research is important because literature influences the thoughts and beliefs of the populace, which influences modern day ideologies which create modern policies of how we should interact with the environment.
Caroline Elyse Glaister

Hometown: Plano, Texas

Major: Public Health

Future Plans: My junior year I was accepted into an Accelerated Masters of Public Health degree where I concurrently worked on my Masters of Public Health during my senior year at Austin College. I will finish the remainder of my M.P.H. at the University of Texas Health Science Center at Houston after graduating from Austin College

Thesis Director: Dr. Mathias Akuoko

Committee Members: Dr. Catherine Bowman & Dr. Saritha Bangara


Temporary labor migrants in the H-2A and H-2B visa programs face unique healthcare challenges. The global COVID-19 pandemic in 2020 has only amplified these healthcare challenges. H-2A and H-2B workers are foreign nationals employed to temporarily work in the United States in the agricultural and non-agricultural low-wage job sectors, respectively. Efforts to protect the nation’s food supply chain and economic system during the COVID-19 pandemic created a high demand for H-2A and H-2B visa extensions. These workers face significant health challenges due to the nature of their occupations, but many go without the needed care. While the recent pandemic exposed what previous research has established as the specific racial, social, and economic vulnerabilities of the H-2 population, there are significant gaps in data and knowledge on health disparities within temporary labor migrant communities. The current study undertook a descriptive cross-sectional online survey to gather primary qualitative data from H-2A and H-2B visa program participants to gain a better understanding of laborers’ healthcare experiences between March and December 2020. It also sought to identify gaps in healthcare and COVID-19 resource accessibility. The study found participants reporting delayed healthcare during the COVID-19 pandemic as a result of accessibility barriers such as cost, language, and lack of sufficient educational resources. This research calls for the reevaluation of temporary labor migrant health policy and the current healthcare routes available for temporary labor migrants.
Megan Goyal

Hometown: Coppell, Texas

Major: Neuroscience

Future Plans: Attending McGovern Medical School class of 2025

Thesis Director: Dr. Renee Countryman

Committee Members: Dr. David Aiello & Dr. Lisa Brown

Thesis Title: *The Effects of Nature Walking Versus Urban Walking on Salivary Stress Markers Alpha Amylase and Immunoglobulin A in College Students*

Walking is a behavioral intervention that can improve stress and overall health outcomes. In addition, nature is a known tool to promote well-being by increasing the quality of life through reducing stress imposed by urban environments. We assessed the physiological and psychological effects of nature walking and urban walking on college students for stress reduction. Alpha-amylase and immunoglobulin A were evaluated as potential salivary biomarkers for stress. A sample of 24 participants completed a perceived stress scale (PSS) and gave saliva samples at baseline and after a nature and urban walk. Overall, the PSS scores after both nature and urban walk significantly decreased compared to the baseline PSS score with nature to a greater extent. We saw no difference in alpha-amylase concentration between the two walks compared to baseline. However, we found a general trend that the immunoglobulin A concentration decreased after both walks, but to a greater extent for the nature walk. The results are indicative that walking in both environments decreases the individual’s perceived appraisal of stress. Additionally, immunoglobulin A might be a good marker for physiological measure of stress; however, alpha-amylase may not be a sensitive marker for future use.
Joshua Amin Himelfarb

Hometown: Houston, Texas

Majors: International Relations & German

Future Plans: Master of Arts in International Affairs at the George Washington University

Thesis Director: Dr. Audrey Flemming

Committee Members: Dr. Ruchan Kaya & Dr. Daniel Nuckols

Thesis Title: *The Far-right Insurgency in the Former Soviet Republics of Eastern Europe*

The power vacuum left in the wake of Soviet collapse generated widespread instability and inequality throughout Eastern Europe and beyond. An environment of this type has cultivated a prevalent far-right presence, which operates synergistically across electoral, cultural, and institutional domains. In this comparative study, in which, the ex-Soviet republics of Lithuania and Ukraine are probed, the primary metrics of inquiry are political-economic challenges to liberal-democratic transformation and identity formation after communism, as affiliated to the region’s radical right mainstreaming. More specifically, the former entails an investigation into the socioeconomic consequences of post-industrial market transition after 1991. The latter focuses on pre-communist influences in shaping contemporary (nation-) state building processes, specifically the weaponization of neo-Holocaust revisionism. A culmination of determinants (as mentioned above) has led to a renascent mobility of the far-right, not witnessed since the interwar and Second World War years, in Central-East European states struggling with newfound material and ontological insecurities.
This study tested the relationship between perceptions of similarity/dissimilarity in levels of physical attractiveness between partners and relationship quality. Previous findings regarding the matching hypothesis in romantic relationships are inconsistent, and there is little research that directly assesses similarity or dissimilarity in physical attractiveness and relationship quality. The current study collected data via Amazon MTurk. The survey included demographic questions, measures of subjective attractiveness, measures of relationship quality, and a measure of preferences for mate characteristics. It was hypothesized that individuals who perceive a mismatch in attractiveness between them and their partner, regardless of whether they perceive their partner to be more or less attractive than the self, will report lower relationship quality compared with those who report a match. The current study contributes to the interpersonal relationship literature by shedding light on how perceptions of physical attractiveness predict relationship quality.
In this paper, I analyze the political themes in the science fiction novel and television series, *The Expanse*. I assess how *The Expanse* explores ideas about political boundaries between societies, and how those boundaries are influenced by economic factors and immigration. Turning to *The Expanse*’s assessment of boundaries as a whole, I highlight the series’ suggestion that they are sometimes imaginary, permeable, changeable, or enforced artificially. Finally, I describe the role that diplomacy and warfare play in *The Expanse*, and what conclusions the series draws about political boundaries as a whole.
The medieval romance Richard Coer De Lyon dramatizes the exploits of Richard the Lionheart in a fantastical display of historical revisionism. One such insertion of fantasy is the romance’s addition of Cassodorien, a demon bride who stands in for Richard’s real mother, Eleanor of Aquitaine. The demon bride archetype that Cassodorien embodies can be found in many medieval folktales and is generally used to create a specific plot pattern: an eligible bachelor discovers a mysterious, wealthy, and attractive woman, the pair marries with a specific marital condition being set, the husband violates this condition, and the marriage is sundered as the demon bride flees through supernatural means. The unknown author’s choice to swap Eleanor for this specific archetype of a mysterious, attractive, and ultimately demonic entity indicates an anxiety over the place female rulers occupied. Coupled with the monstrous forms of maternity common in the demon bride archetype, the Cassodorien episode can be used to create new readings of popularly analyzed sections of RCL and create new interpretations that incorporate medieval theories of gender and bodily influence.
Elizabeth Ann Munns

Hometown: Plano, Texas

Majors: East Asian Studies & German

Future Plans: I’ve applied to the JET program and plan to apply to graduate programs in East Asian Studies

Thesis Director: Dr. Melinda Landeck

Committee Members: Dr. Ruth Cape & Dr. Scott Langton

Thesis Title: Steeped in Culture: Tea Tourism in Japan

This research explores the concept of “tea tourism” as a central facet of Japan’s domestic and international tourism industry. In the postwar era, a niche market has sprung up revolving around the cultivation, marketing, and consumption of domestically-produced Japanese tea, both as a commodity and as a site for making cultural meaning. This project examines the history and importance of tea in Japanese culture, highlighting key drivers for tea-related tourist experiences and sites, including patterns of consumption and collection, the desire to acquire or display cultural expertise, a national interest in exploring Japanese identities through traditional arts and culture, and/or commercial interests in the international tea market. The educational and profit-driven interests of Japanese producers and host industries will be factored into a consideration of how tea has come to operate as a unique signifier of Japanese heritage, history, and culture, and how this commodity may be effectively marketed to tourists. I’ve applied a cross-cultural approach that also draws comparisons to the Chinese tea industry and the similar manner in which tea functions as a site for “cultural tourism” in yet another East Asian context. Such an investigation necessarily spans disciplinary methodologies derived from anthropology, economics, national history, and material culture.
Hanna Elizabeth Paine

Hometown: Paris, Texas

Major: Communication

Future Plans: Pursue a career in journalism or grant writing

Thesis Director: Dr. Michael Fairley

Committee Members: Dr. Brett Boessen & Dr. Colin Foss

Thesis Title: *Born in the Wrong Generation: Imagined Nostalgia in Logoed Tee Shirts and the Youth Clothing Market*

The youth clothing market is saturated with 'retro' or 'vintage' brand logos from past decades that are encoded with an idealization of them. Nostalgia has become a marketing strategy and arguably a market in itself. The youth demographic is marketed tee shirts emblazoned with logos and phrases from and about past decades in which they were never alive to experience. Nostalgic marketing in the youth demographic has been widely disregarded in academia although it is a prominent mode of advertising. The permeation of logos within our everyday lives enables nostalgic tee shirts to create an identifiable, positive association between the logo and its respective decade. Drawing on the popular sentiment, “I was born in the wrong generation,” this paper emphasizes the existentialism within the phrase and its effects on both the youth and pop culture clothing. There have been few analyses on this phenomenon using a semiotic model. Consequently, there has not been a concept that differentiates this phenomenon from nostalgia’s true definition. Informed by Eco’s (1976) Theory of Semiotics, this analysis uses the term ‘imaged nostalgia’ to describe how elements of the graphic tees create meaning through seemingly reminiscent visuals.
Jaran Max Rudd

Hometown: Austin, Texas

Majors: Anthropology & Spanish

Future Plans: I plan to find work at an entry-level job for a year or two while applying to a Ph.D. program in Anthropology

Thesis Director: Dr. Brian Watkins

Committee Members: Dr. Catherine Bowman, Dr. Terry Hoops & Dr. Elena Olivé

Thesis Title: How COVID-19 is Deepening the Environmental Crisis Among the Kichwa: A Discourse Analysis

The current health and healthcare crisis has devastated the world and requires that communities change their cultural sense of normalcy to adapt and survive. This presentation considers how the cascade effect of Covid-19 on top of the environmental crisis caused by development projects is affecting the Kichwa Indigenous community of the Amazon in Ecuador. Through an exploration of the discourses of, and corresponding practices that emanate from, neoliberal development and that of the political-economic philosophy of the Kichwa, the Sumak Kawasy (the good living), I will uncover the limitations of development projects in making the lives of this Indigenous group better and unravel the socio-cultural significance of the agency and collective resistance with which the Kichwa embody in order to survive and protect their way of life. Utilizing a motley assortment of virtual, semi-structured interviews through WhatsApp video and audio calls and through that of email questionnaires, I’ve kept in contact with two Kichwa members of the Pastaza region to learn about their situation, thoughts, and actions. This presentation gives detail to the investigation of various local Kichwa projects that they’ve started to recuperate ethnobotanical nutritional resources lost due to oil spills.
Odalys Ruby Sarabia

Hometown: Dallas, Texas

Major: History

Future Plans: Master of Arts in Teaching

Thesis Director: Dr. Felix Harcourt

Committee Members: Dr. Julie Hempel & Dr. Claire Wolnisty

Thesis Title: Japanese Internment in Seagoville, Texas

The United States held citizens of Japanese descent in internment camps during World War 2. One of those camps was the Seagoville Enemy Alien Detention Station, a facility that housed women and families, located in my hometown of Seagoville, Texas. The facility was transferred from the Bureau of Prisons to the Immigration and Naturalization Service in 1942. Dr. Amy N. Stannard, the officer in charge of the Seagoville Detention Center, became the only woman who ran an internment camp in the United States during this time. The scope of my study can be summarized into four categories – the social and political pre-conditions that allowed for this to happen, internment in the United States and Texas, the Seagoville Internment Camp, and internment after the war ended. As I present this information, I am looking to pay special attention to the Latin Americans of Japanese descent who were deported to the United States from their home countries and were then ultimately deported to Japan.
Andrea Renee Selkow

Hometown: Turlock, California

Major: Biochemistry

Future Plans: Andrea plans to pursue a Ph.D. in Chemistry at Colorado State University

Thesis Director: Dr. Ryan Felix

Committee Members: Dr. David Aiello & Dr. James Hebda

Thesis Title: *Exploring the Synthesis of Anisucoumaramide*

Coumarins are used widely in medicine because of their pharmaceutical versatility, which includes the ability to act as an anticancer, antibacterial, or immune system activating drug. Anisucoumaramide is a recently discovered coumarin derivative found in Clausena anisum-olens with monoamine oxidase-B (MAO-B) inhibitor potential. Artificially synthesizing this compound in lab would enable the further investigation of anisucoumaramide’s biological properties, as harvesting the molecule from C. anisum-olens gives very low yields. The work reported here explores the synthesis of the furanone side chain and coumarin backbone. For the furanone side chain, methylation, and allylation reactions are explored as well as a ring expansion reaction that would transform an epoxide into a five-membered furanone ring. A cross-coupling reaction was also explored for the coumarin backbone synthesis pathway. While the synthesis is currently incomplete, these steps provide insight on how anisucoumaramide might be synthesized and provide a foundation for future research to complete the synthesis and improve yields.
Veronique Irene Tessier

Hometown: Allen, Texas

Major: Environmental Studies

Future Plans: Gain experience with a temporary field job before applying to graduate school in Ecology or Environmental Science

Thesis Director: Dr. Peter Schulze

Committee Members: Dr. Loriann Garcia & Dr. Keith Kisselle

Thesis Title: *Forb Abundance and Composition After 20 Years of Tallgrass Prairie Restoration*

Over 99% of the Blackland Prairie ecosystem in North Texas has been degraded or destroyed. This is mainly due to plowing for crops, which followed the removal of native bison and prevention of wildfires that historically allowed grasses to dominate. In order to learn how to best restore the former ecosystem, Austin College has run a 20-year experiment using various combinations of seeding, fire, grazing, and mowing at the Sneed Prairie. The goal is to reestablish historic plant communities and ecosystem services on this former agricultural land. Until 2020, monitoring efforts focused on dominant grasses. I have filled a gap in previous research by measuring the abundance of over 40 species of forbs, or wildflowers, which contribute valuable diversity to prairie ecosystems. To better understand the relative quality of the plant communities in the restoration fields, I compared the forb communities of the various management procedures (experimental treatments) to each other and to nearby unplowed remnants of Blackland Prairie. My findings suggest that the prairie is recovering, but the current forb communities in the restoration fields are still vastly different from what they were historically.
Honors Nominees 2021-2022

**Anthropology**
Nicole S. Deluna
Charley Francis Bartolo

**Biology**
Ruthann Helen Schmiege
Madelyn Grace Oliver*
Jessica Lynn Hoffman
Emma Alexandra Solis

**Chemistry**
Jade Makenna Kemp
Michael Quang-Huy Le

**Communications, Media Studies, & Theatre**
Olivia Leeann Trusty
(Theatre)

**Computer Science**
William Ryan Koelzer*

**English**
Sonia Charales
Delice Dembe
Isabel Ana Murphy

**Environmental Studies**
Brittany Adia McMillen

**German**
Sarah Elizabeth Harper*
Randall Jones

**History**
Logan Shevalier
Claudia Marie Theriot
Valery Piachonkina

**Mathematics**
William Ryan Koelzer*
Prithvi Satyan Kalkunte
Sergio Alonso De Paoli
Kyle Dean Reagan Lemke
James William Adams

**Physics**
Paola Giselle Torres
Brett R. Skinner

**Physics/Engineering**

**Political Science**
Julia P. Fields
Shannon Marie Berry
Caelie Jane Morris

**Psychology**
Sarah Elizabeth Harper*
Carrie Elizabeth McIntyre
Shannon Claire Fagen
Briana Marie Arevalo

**Public Health**
Ishb Mansur Plumber

**Spanish**
Madelyn Grace Oliver*
Marissa Graf
Yasmine Jinan Bukhari

*Nominated in two departments*
Alpha Chi is a national honorary society devoted to the promotion and recognition of scholarship effective among the undergraduate students in the academic division of the colleges and universities in the United States. Each year the faculty elects to the Alpha Chi membership the appropriate number of qualified candidates. Candidates for Alpha Chi are elected from the top ten percent of the senior class and the top five percent of the junior class by grade point average.

ALPHA CHI
National Scholastic Honor Society

Emily Jean Aller          Sarah Elizabeth Harper*          Sophie Emma Scott Oliver*
Abigail Lynn Anderson    Jessica Lynn Hoffman*          Nicole Hanna Pinkerton
Jessica Lynne Atwell      Jack Harrison Hittson-Smith*  Logan Shevalier*
Yasmine Jinan Bukhari*    Katie Gudrun King*            Christian Alexander Spurlock*
Freyja Grace Coe          William Ryan Koelzer*          Jessica Rae Thoennes
Brittany Quynh Thi Dang   Michael Quang-Huy Le*        Jonathan Cole Voos*
Nicholaus P. Frederick    Alex Sunggu Lee*             Zoya Iqra Waheed*
Caroline Grace Fullerton  Zachary Robert Magers         Sumeya Said Yassin*
Abigail Kathryn Goodman*  Aguiele Ndoungla Fobasso Awah* Rachel Ann Young
Megan Goyal               William Douglas Newsom*
Saif M. Haque

* 2020-2021 New Members
The Phi Beta Kappa Society, the oldest academic honor society, has a mission of fostering and recognizing excellence in undergraduate liberal arts and sciences. Selection to the Austin College chapter is by vote of faculty Phi Beta Kappa keyholders based on scholarly achievement, broad cultural interest, and good character. New members are selected from the graduating class each year with attention given to their overall scholarship with weight given to both the academic record and the breadth and proportion of the candidate’s program demonstrated by the number and variety of courses taken outside the major. Candidates display a spirit of intellectual adventure, which is manifest in many ways including, but not limited to independent research, scholarly activity, significant advanced work outside the major, and significant coursework across all three divisions of the college.

PHI BETA KAPPA
National Undergraduate Honor Society

Emily Jean Aller*
Abigail Lynn Anderson*
Freyja Grace Coe*
Brittany Quynh Thi Dang*
Caroline Grace Fullerton*
Abigail Kathryn Goodman*
Megan Goyal*
Wyatt David Hill*
Joshua Amin Himelfarb*
Matthew J. Li*
Anna Rose Long*
Alyssa Anne Longaker*
Zachary Robert Magers*

Allen Christopher Mankin*
Samuel Manton Marsh*
William Douglas Newsom*
Elizabeth C. Parker*
Nancy Pineda Gama*
Nicole Hanna Pinkerton*
Andrea Renee Selkow*
Veronique Irene Tessier*
Jessica Rae Thoennes*
Robert Hunter Williams*
Sumeya Said Yassin*
Rachel Ann Young*

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