

| Method   | References  |
|--|---|
| <b>Sampling and Recruitment</b><br><i>Convenience and snowball sampling</i> <ul style="list-style-type: none"><li>100 Filipino/Filipino-American adult, female students attending CU will be recruited.</li><li>The researcher will email presidents of two CU student organizations and ask them to share a recruitment flyer and link with eligible participants.</li><li>Eligible participants will also be asked to share the recruitment flyer and link with other eligible participants.</li><li>The researcher will also post copies of the recruitment flyer around campus.</li></ul> <b>Participants</b><br>100 eligible participants will meet the following criteria: | Beck, A.T., Epstein, N., Brown, G., & Steer, R. A. (1988). An inventory for measuring clinical anxiety: Psychometric properties. <i>Journal of Consulting and Clinical Psychology</i> , 56, 893–897. doi:10.1037/0022-006X.56.6.893<br>Chang, E. (2013). Perfectionism and loneliness as predictors of depressive and anxious symptoms in Asian and European Americans: Do self-construal schemas also matter? <i>Cognitive Therapy &amp; Research</i> , 37, 1179–1188. doi:10.1007/s10608-013-9549-9<br>Frost, R.O., Marten, P., Lahart, C., & Rosenblate, R. (1990). The dimensions of perfectionism. <i>Cognitive Therapy and Research</i> , 14, 449–468. doi:10.1007/BF01172967 |



# GRADUATE STUDENT SCHOLAR SYMPOSIUM

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## ABSTRACT VOLUME

SPRING SESSION



CHAPMAN  
UNIVERSITY

**Office of Research and  
Graduate Education**

FRIDAY, APRIL 11, 2025 - 3:00-5:00 PM  
BECKMAN 404 ORANGE CAMPUS

**Creative Writing**

**1. Who's the Best?: Contributor Demographics and Publication History in The Best American Poetry**

**Presenter(s):** Abbie Berman, Sydney Boone, Fletcher Brower, Margaret Garcia, Cheyenne Herbert

**Advisor(s):** Dr. Anna Leahy

The Best American Poetry series began in 1988. Since its inception, the annual anthology has been edited by David Lehman, with a diCerent guest editor each year, and published by Simon & Schuster. This collaborative research project is a pilot, which could be adapted for a broader study to evaluate the entire series at the conclusion of Lehman's editorship in 2025. Our analysis is of the 2024 volume, representing work originally published in 2023. This volume includes one poem by each of 75 poets. Our work examines the key data points of gender, age, location, original publication, and educational background. This analysis aims to draw connections between these demographic and publication history indicators and appearance in the Best American Poetry anthology. As MFA students, we are particularly interested in the percentage of poets who have earned an MFA or Doctorate degree as part of our investigation of the world of publishing, credibility, and notoriety. Looking at this data, rather than our usual focus on craft of the poems themselves, may prove valuable for understanding the complex relationships between poets, editors, and publishers and for developing a framework in which these components work in literary culture. Our research seeks to quantify what makes a poem worthy of being selected as one of the "best" of that year based on information about the poets themselves and their publication paths in addition to the aesthetics of the poems. This preliminary study creates a framework that can be applied to each volume, both past and future.

## **Communication Sciences and Disorders**

### **1. Increasing the Accessibility of Trauma Focused Cognitive Behavioral Therapy (TF-CBT) for Adolescents with Developmental Language Disorder**

**Presenter(s):** Lauren A. Fillet

**Advisor(s):** Dr. Leah Beekman-Velarde

Research has demonstrated that adolescents with developmental language disorder (AWDL) perform more poorly compared to typically developing peers on measures of narrative production. Narrative samples produced by AWDL have been found to be less complex, shorter in length, include more errors, be less cohesive, and to omit important details compared to narratives produced by typically developing adolescents (as cited in Wetherell et al., 2007). This limitation may not only impact education and social life, but also possibly post-traumatic stress recovery, as Trauma-Focused Cognitive Behavioral Therapy (TF-CBT), one of the most widely used evidence-based treatments for post-traumatic stress disorder (PTSD) in youth, incorporates a trauma narrative production activity as an integral component of treatment (as cited in D'Amico et al., 2022). During the trauma narrative task, survivors of trauma are guided by a mental health provider to construct a narrative that details the traumatic experience. AWDL who suffer from PTSD may lack full accessibility to the benefits of TF-CBT because of the challenges they experience in narrative construction. A limited amount of research has been conducted on adapting TF-CBT for children with intellectual disability, developmental disabilities, and Autism Spectrum Disorder (ASD) (as cited in D'Amico et al., 2022; Anderson & Cook, 2015). However, more work needs to be done to determine the best evidence-based adaptations, and furthermore, there is currently no available research explicitly addressing how TF-CBT can be individualized to meet the unique needs of AWDL. The aim of this pilot study is to begin identifying the specific barriers this population faces when tasked with a trauma narrative activity, as well as specific accommodations for the trauma narrative task. Systematic literature review and expert interviews were conducted and analyzed to develop a summary of most frequently identified barriers and solutions. Results of the present study will inform the design of a larger scale study on this topic.

## **Computational and Data Sciences**

### **1. Multi-Phase Language Model Pipeline for Robust Prostate Cancer Prediction**

**Presenter(s):** Mohammadreza Rezaei, Dorna Davani-Davari, Shahryar Fazli

**Advisor(s):** Cyril Rakovski

**Background:** While structured clinical variables, a significant portion of relevant information is frequently recorded in unstructured clinical notes. These notes capture subtle contextual cues, coexisting conditions, physician assessments, and patient-reported symptoms that traditional risk models often miss. As a result, relying solely on structured data can yield incomplete prognostic insights. Recent advancements in large language models (LLMs) offer the potential to bridge this information gap by extracting details from unstructured medical notes. LLMs can synthesize textual data into clinically meaningful features, ultimately strengthening survival predictions. **Methods:** We developed a locally hosted LLM training pipeline with two primary optimization phases. First, we performed supervised fine-tuning (SFT) as a cold start using synthetic prostate cancer notes to preserve patient privacy while aligning the model with real-world physician-labeled data. Subsequently, we refined the SFT model via pure reinforcement learning (RL), combining an optimized Group Relative Policy Optimization (GRPO) algorithm with a chain-of-thought (CoT) language consistency reward. Then, we merged the LLM-extracted features with structured patient data (e.g., demographics, comorbidities) and trained multiple machine learning classifiers. **Results:** Our pipeline provided more context-sensitive representations of unstructured clinical notes, yielding stronger prognostic signals. Among the tested models, SVM delivered the highest accuracy (68%) and precision (60%), while random forests stood out for their recall performance (49%), aiding high-risk patient identification. ANN offered balanced performance across key metrics, and logistic regression maintained competitive interpretability with an AUC-ROC of 60%. The combination of LLM-derived features with structured clinical data facilitated a more robust risk assessment and deeper insights into survival determinants. **Conclusion:** This study proposes a multi-phase, privacy-preserving framework that leverages synthetic data, sequential fine-tuning

(SFT), reinforcement learning with GRPO, and a CoT language consistency reward to refine prostate cancer prognosis. By effectively synthesizing unstructured text and established clinical variables, our approach achieves enhanced predictive accuracy and interpretability. Future work will focus on extending the framework to other cancer types and further improving explainability for integration into clinical practice.

## **Electrical Engineering and Computer Science**

### **1. Optical Force Analysis and Design: a Machine Learning Approach**

**Presenter(s):** Ponthea Zahraei, Saman Kashanchi

**Advisor(s):** Nooshin M. Estakhri, Nasim M. Estakhri

The modeling and design of nanophotonic and optical structures can greatly benefit from deep-learning approaches. Traditional full-wave simulations are time and resource-intensive, which can act as a bottleneck in photonic design. On the other hand, deep-learning approaches for designing the response of nanophotonic geometries can be computationally inexpensive and produce accurate and efficient results. In this project, we specifically investigate the case of optical forces near meta-structures. We propose using an inverse design approach with residual blocks to account for the deep nature of this architecture and inherently address the non-uniqueness problem. A tandem approach, which consists of two interconnected models, is used, with the predictive model (the model that takes in a metastructure geometry and outputs a spectrum) acting as the ground truth. Region of Interest (ROI) modeling is also used to target particular regions in the optical spectrums that are of interest and produce highly targeted meta-surface geometries. This baseline architecture can be modified to fit a multitude of nanophotonic and optical structures. We report successful results in modeling optical forces near nanophotonic and optical structures using an inverse tandem design approach and region of interest modeling, which can be valuable for the future of the nanophotonic and optical field.

## **2. Characterization of the Coherent Backscattering Phenomenon in Finite Disordered Structures**

**Presenter(s):** Hazel Caruthers

**Advisor(s):** Nooshin M. Estakhri

Coherent Backscattering (CBS) is an intriguing phenomenon resulting from optical waves interacting with multiple scatterers forming disordered structures. CBS can be characterized by observing the field intensity enhancement in the backscattering direction (i.e., scattering going back toward the source). CBS research usually focuses on this coherent effect in a larger medium with high opacity, but in our research, we investigate the effects of CBS in finite-sized sparse disordered media using a powerful full-wave numerical analysis tool. Given the random nature of the structure, and to assist our study, we require high-power computational techniques, specifically using a software package called CELES which can efficiently simulate and analyze how light interacts with a given configuration of scatterers in a medium. This enables us to run simulations, observe polarization effects, and capture scattering data based on configurable input parameters such as sample size, density factor, angle of incidence, and beam waist. We also recently implemented new parameters for generating particle configurations with certain cube medium edge lengths, as well as simulating different near-field profiles. The crucial feature we investigate is the enhancement convergence, which is observable through direct ensemble averaging over hundreds of simulations. This shows the overall enhancement patterns that emerge from random samples with the same parameters. Our work in studying the coherent backscattering phenomenon helps explore the possibilities and potential of using this effect as a new powerful diagnostic tool for certain scientific and industrial applications.

### **English**

#### **1. “More Than What [They] made Us to Be”: From Passing to Perception in Victorian and Modern Vampire Media**

**Presenter(s):** Lauren Sieberg

**Advisor(s):** Dr. Renee Hudson

Throughout Victorian Gothic horror, vampires function as deviant figures, maneuvering within social confines of passing until their status quo-threatening identity is exposed. Of the popular vampires from this period, most gradually fail to maintain status as social insiders—as demonstrated with Bram Stoker’s *Count Dracula* or Sheridan Le Fanu’s *Carmilla*, who possess the temporary capacity to pass until their hidden monstrosity is revealed over time. Even if Gothic monsters are confined to a limited wild space and time far from society, this is still not enough; in accordance with the Victorian culture of morality policing by dominant groups, the vampiric Other must be eradicated regardless of how it performs identity, and its perspective is wholly neglected. Comparably, numerous modern vampires rebel against these confines; figures like Ana Lily Amirpour’s skateboarding, chador-wearing Girl or Gilda from Jewelle Gomez’s “The Gilda Stories” demand perception and prioritize radical humanization (both alone and within Othered communities)—often through reclaiming their otherness by spurning notions of passing altogether. In the process, these vampires’ narratives bring sociopolitical standards to light; yet unlike their Gothic counterparts, these vampires thrive, calling for active change and reimagination as told from the monster’s perspective. This project combines approaches to passing within existing scholarship (GoCman, Butler) with foundational monster theory texts to explore a key transition from historic to modern horror. Whilst Gothic vampire media reflects the inevitable and “necessary” exposure, subjugation, and destruction of a foreign Other (depicting the vampire’s failed efforts to pass wherein performativity dissipates, unmasking underlying monstrosity and Victorian era racial/cultural/sexual/gender anxieties), the modern vampire tears itself from its predecessors’ closet, asking audiences to imagine a reality in which self-actualization, community empowerment, restorative justice, and challenging dominant norms can enable greater connection.

## **Food Science**

1. **From Expression to Acceptance: Method Development and Comparison of Automated Facial Expression Analysis and Check-All-That-Apply Technique for Emotional Responses to Novel Proteins**

**Presenter(s):** Aravindan Kadirval, Nour Younies

**Advisor(s):** Dr. Cassandra Maya, Dr. Thuy Xuan Uyen Phan

Edible insects have emerged as a significant novel protein source but face troubles because of their poor consumer acceptance as they are perceived as “disgusting” in most Western societies. Traditional methods of consumer acceptance such as questionnaires are the standard for measuring consumer attitudes but there are various emerging technologies such as automated facial expression analysis (AFEA) that can help capture and analyze real-time emotional responses. Facereader is a modern AFEA software capable of quantifying facial expressions of participants. This study aimed to develop a methodological approach for assessing emotional responses to novel food proteins by comparing responses captured through AFEA with those reported by traditional questionnaires. Images of edible insects in various environments were used as stimuli to evoke diCereent emotions. Emotional reactions were recorded using Noldus Facereader software. The test was conducted with 30 participants who viewed six images of edible insects, each displayed for 7 seconds. The participants then completed a questionnaire comprised of 40 emotional responses in Check-All-That-Apply format using the same stimuli. The subjective responses from CATA questionnaire were compared with the emotional reactions recorded and analyzed by the Facereader. The Facereader results indicated a predominantly neutral emotional response to edible insects, with sadness and surprise as secondary emotions. In contrast, the Qualtrics survey revealed stronger emotional reactions, particularly regarding disgust. Stronger emotional reactions were observed in response to stimuli featuring processed insect products compared to insects in their natural environments indicating their poor consumer acceptance. Despite the diCereence in intensity, the similarities in the results suggest a connection between emotional responses, indicating the validity of Facereader as an eCective method of facial expression analysis. The findings suggest that facial analysis software has the potential to complement or serve as an alternative method for evaluating consumer attitudes toward novel foods.



## **War, Diplomacy, and Society**

### **1. The Value of Holidays in World War I America**

**Presenter(s):** Laura K. Neis

**Advisor(s):** Jennifer Keene

How were holidays celebrated during WWI? Many historians have examined holidays, but few have examined the impact of war on celebrations, even though this is an important part of culture. This thesis uses newspapers to prove that WWI affected what people valued, which in turn impacted American celebrations of the Fourth of July and Christmas. These two holidays became patriotic ways to demonstrate unswerving loyalty to the U.S. government, with charitable pursuits, parties, and even meals altered. These holidays impacted the war in turn by bolstering morale on the homefront and overseas and strengthening Americans' emotional connection to the war. Surprisingly, the Fourth of July became an international holiday which emphasized the United States' historical ties to France, and the shared values between the United States and Great Britain. However, many Black Americans were disillusioned by the idea that the war was "for democracy," when they themselves were discriminated against at home and within the armed forces. Instead of celebrating the Fourth, many celebrated Emancipation Day. Christmas had long been considered a secular, as well as religious, holiday, but wartime made it patriotic. Celebrations became a vehicle to raise morale for soldiers, as the Red Cross worked tirelessly to provide homesick soldiers with gifts and parties. Conversely, some Jewish Americans were frustrated by the idea of a "secular" Christmas, as this amplified the Christian dominance of the U.S. religious landscape. But refusing to celebrate a "patriotic" holiday was risky due to the heightened patriotic fervor. Jewish holidays such as Rosh Hashanah were not given equal prominence to Christmas by the United States government, even though a patriotic and religious holiday was clearly possible. Overall, the preferred method of celebrating two key holidays in WWI imposed a system of values that left out significant portions of that population.



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