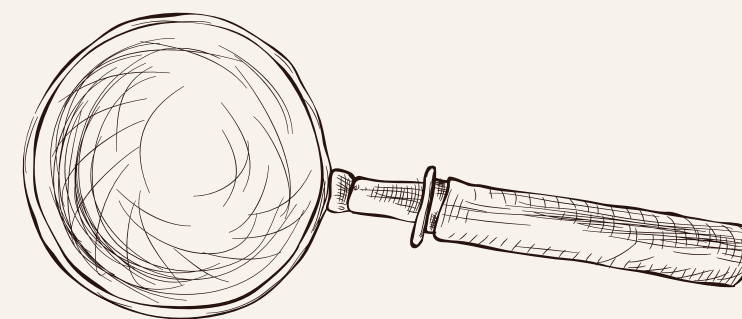


SEARCH

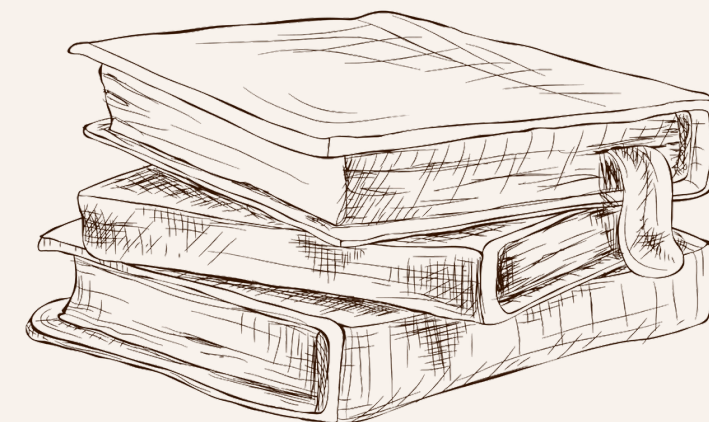
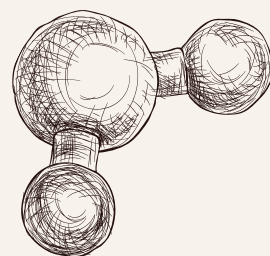
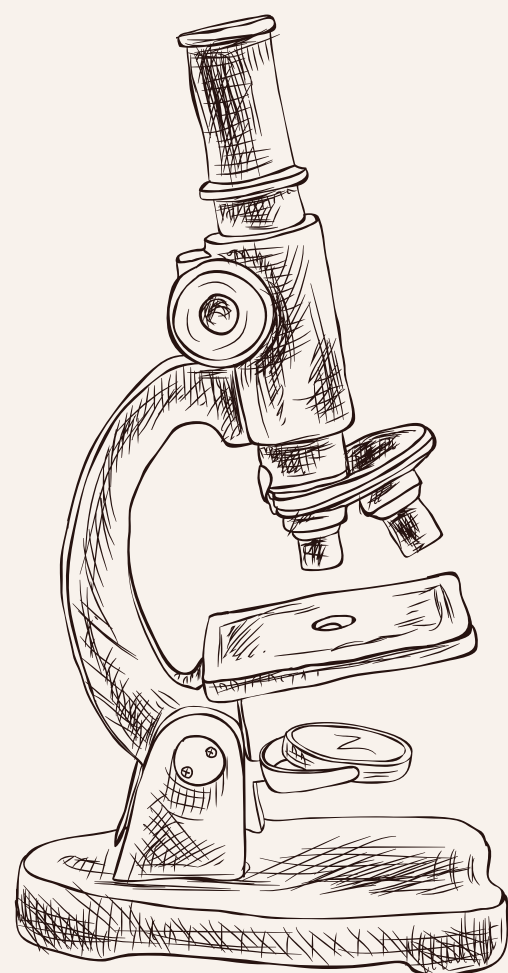
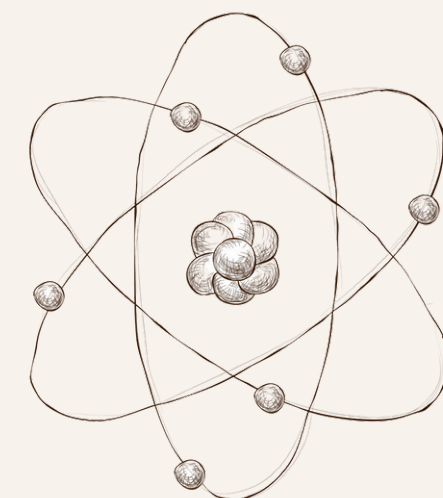
annual symposium



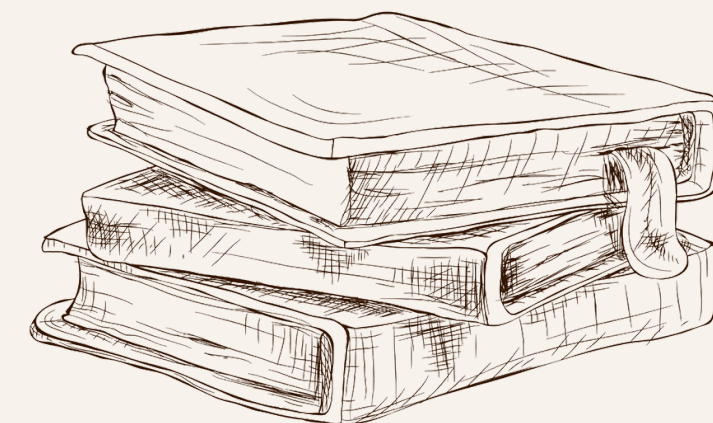
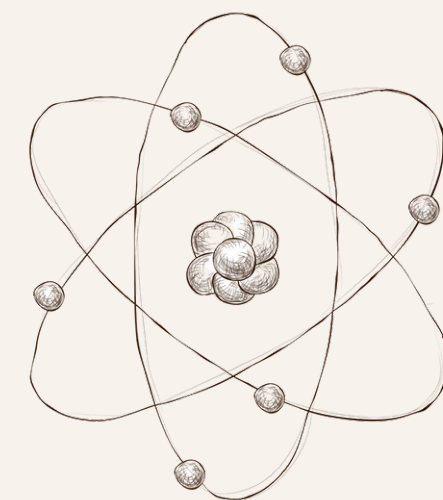
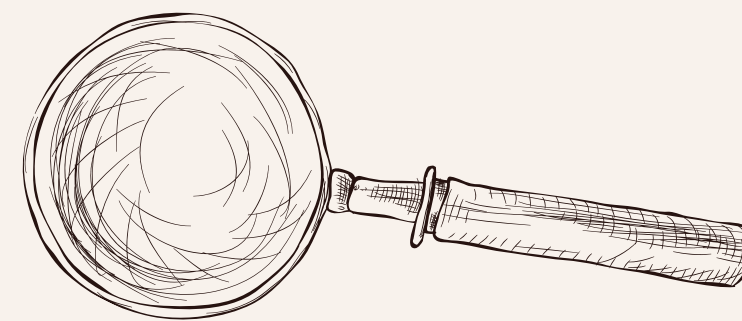
SEARCH 2026

Q & A

INFORMATIONAL SESSION



S **e**e
E **x**plore
A **s**k
R **e**search
C **e**lebrate
H **o**nor





IRB Approval REQUIRED

*If working with human subjects

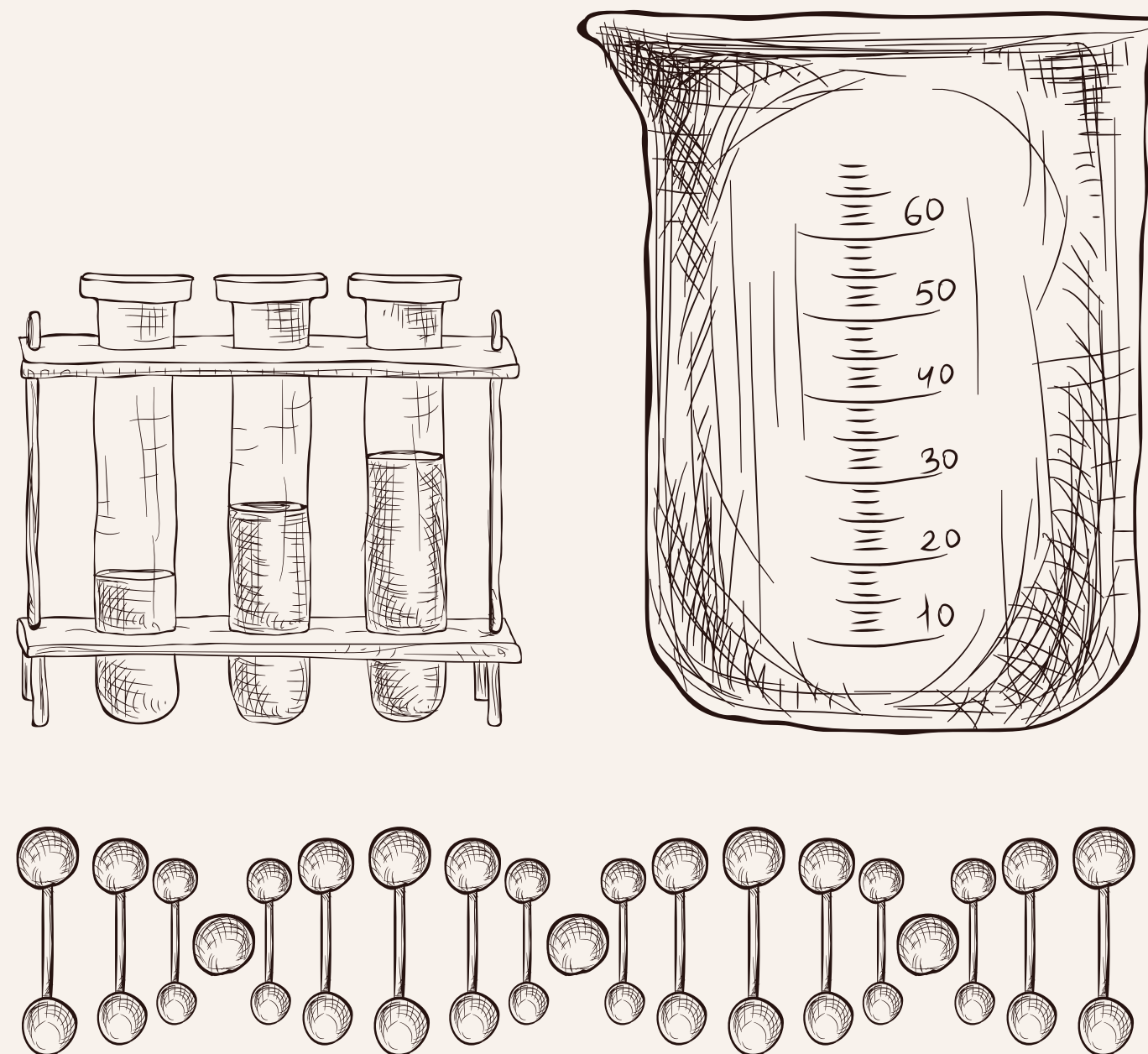
**No later than Friday, February 20

***Forms available through the AEP - work with your Faculty Sponsor to complete



Student Poster Submissions

DUE by Tuesday, March 10, 2026
@ 5 p.m.



Submitting a Poster



01

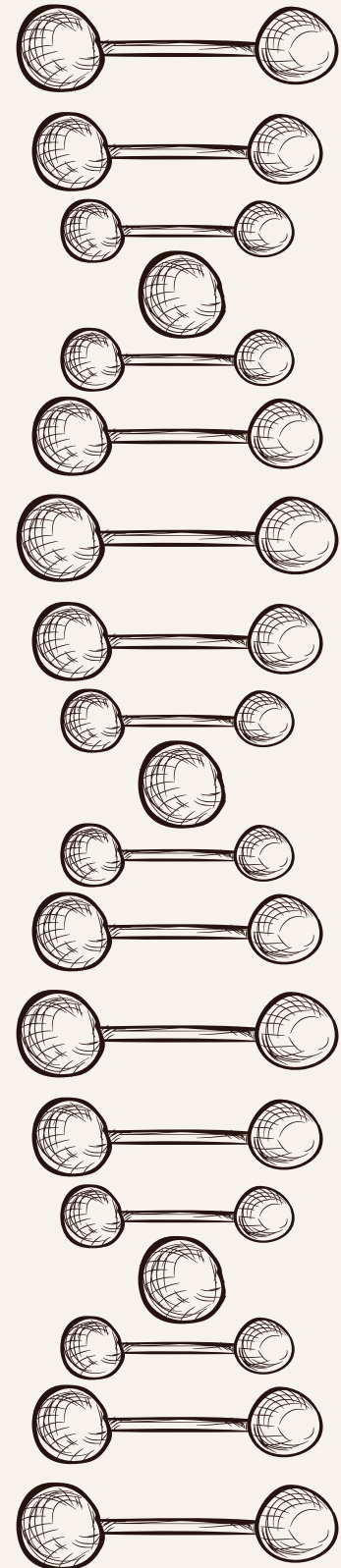
Anyone who submits a paper **MUST ALSO** submit a poster.

02

You can submit **ONLY** a poster and **NOT** a paper.

03

Poster submissions are **NOT** eligible for prizes.



Student Poster Submission Specifications

DUE?

- Poster PDF due Tuesday, March 10 by 5 p.m. with an abstract for your poster (summary of what it covers)

WHEN?

- Student Showcase is at 8 p.m. on Thursday, April 9, 2026

WHERE?

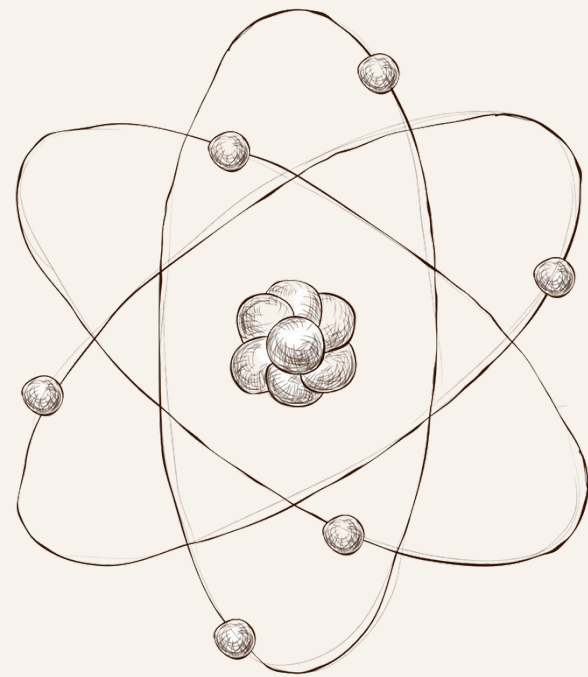
- Luce Auditorium in the CLC

WHAT SHOULD I WEAR?

- Business professional attire

WHAT SHOULD I BRING TO THE POSTER SESSION?

- Prepared talking points about the poster.



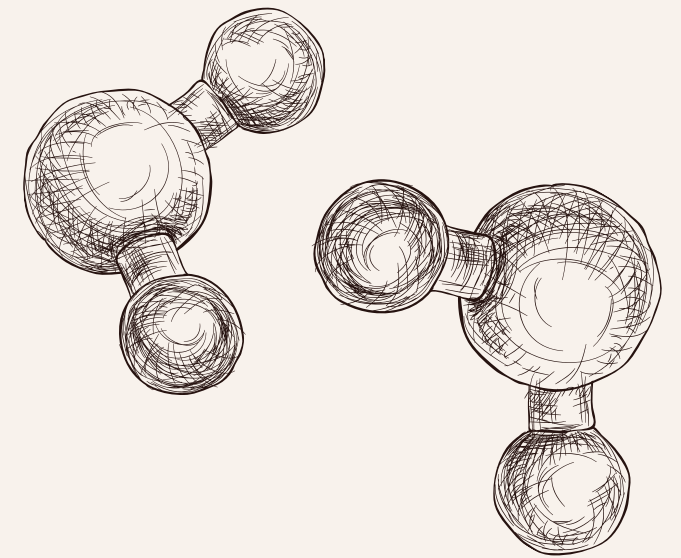
Student Poster Submission Specifications

SIZE and FORMAT:

- 3' x 2' OR 4' x 3' (size has to be correct) **Must submit in .pdf format
- The title should be clear and central with the AU logo, your name, and your faculty sponsor's name
- Clear font, no smaller than Arial 24 pt.
- Each student is limited to 1 poster
- Poster-only submissions are not eligible for awards
- Can be submitted by a group
- IF your poster is already printed -- turn in by March 10



Poster Content Considerations



01

CLEAR AND CONCISE

02

ESSENTIAL

03

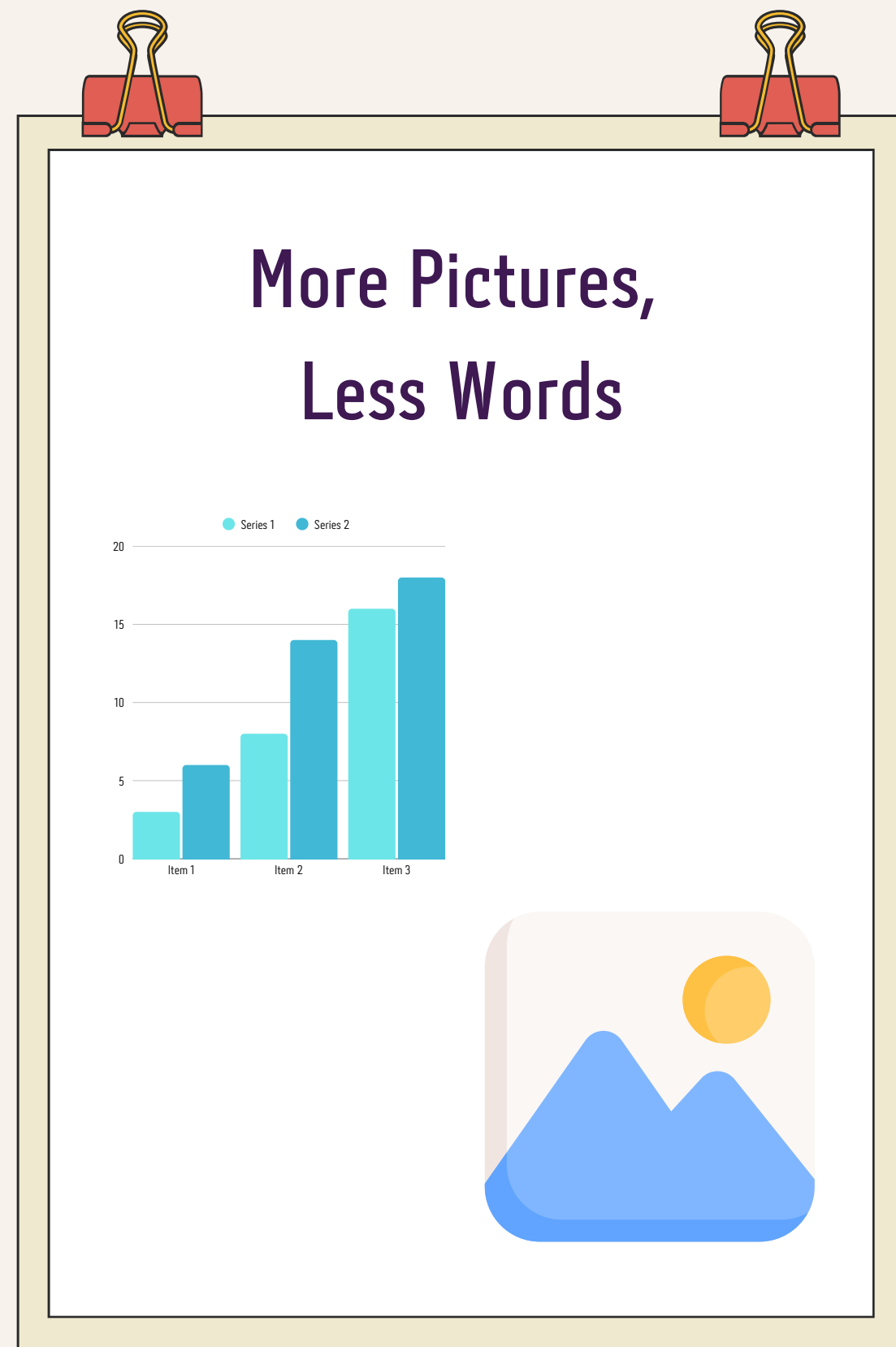
RELEVANT AND SIGNIFICANT

04

ORGANIZED

05

CLEAR PURPOSE



Poster Design & Layout Considerations

01

BALANCE

02

ALIGNMENT

03

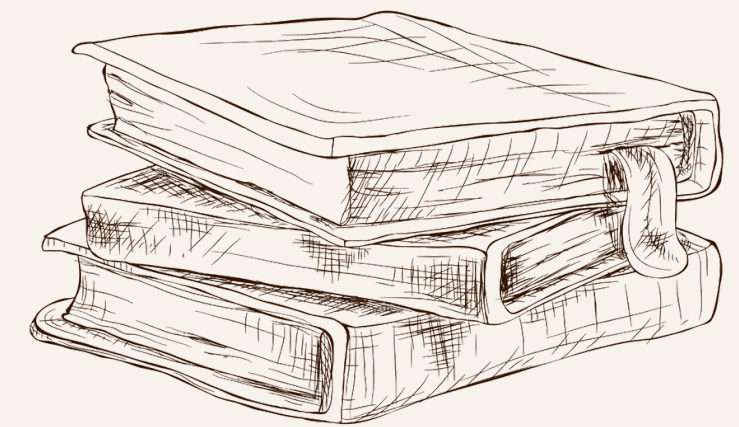
CONSISTENCY

04

COLORS

05

WHITE SPACE



Poster Graphics

01

CHARTS

02

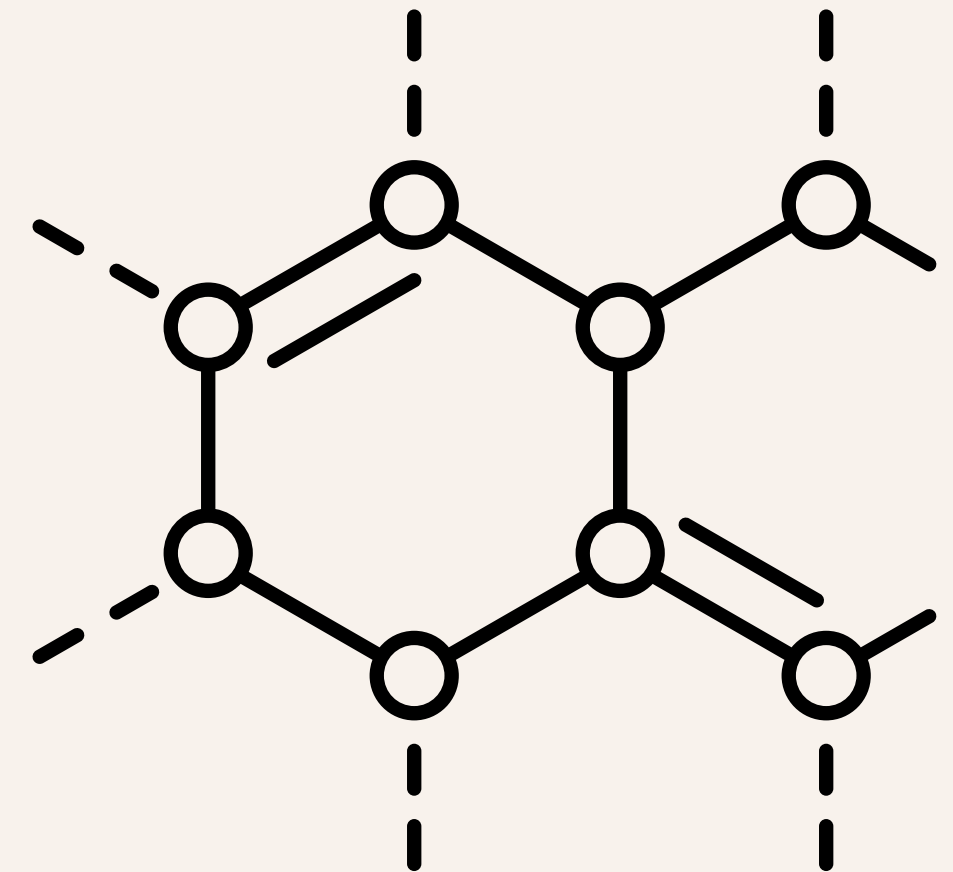
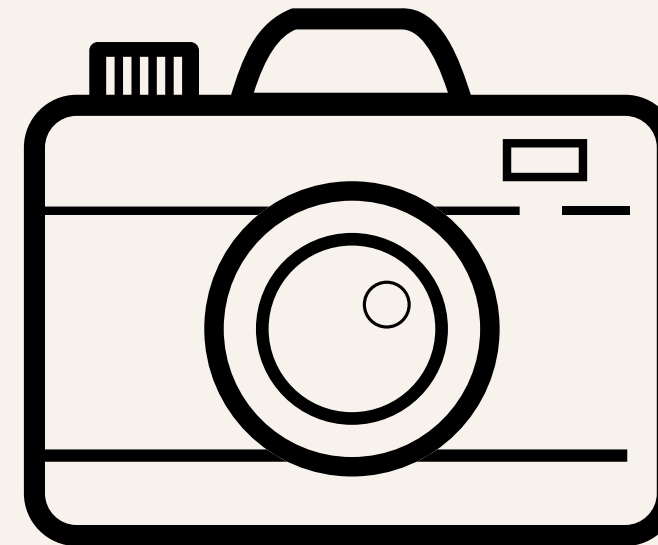
DIAGRAMS

03

PHOTOGRAPHS

04

ARTWORK



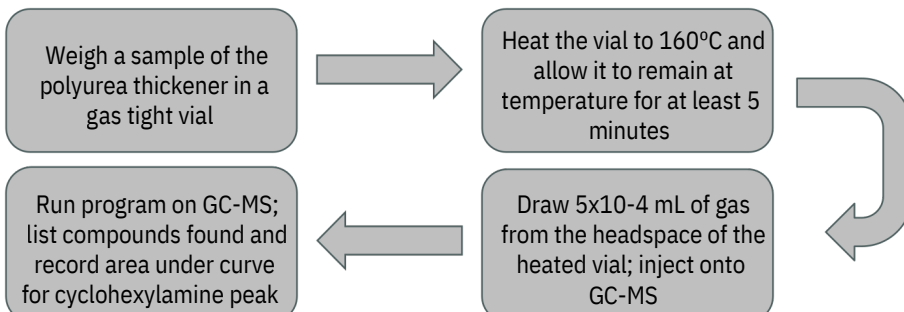
Quantifications and Verifications of Volatile Organic Compounds Evolving from a Polyurea Thickener

Student Name and Wilson Shafer PhD

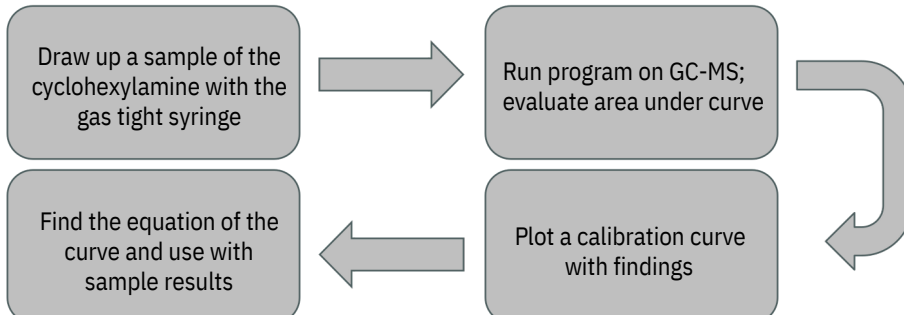
INTRODUCTION

- Polyurea greases are being used to relace barium greases, which cause health problems
- Polyurea greases are beneficial because they have antioxidative properties, high thermal stability, they do not leave behind water residue, and have 3-5x the life expectancy of lithium-based greases
- Polyurea greases are made with polyurea thickeners
- Volatile organic compounds (VOCs) may be evolved from polyurea thickeners when heated
- VOCs may cause:
 - Irritation of eyes, skin, mucous membrane, respiratory system
 - Eye and skin burns
 - Cough, pulmonary edema
 - Drowsiness, dizziness
 - Diarrhea, nausea, vomiting
- VOCs are regulated by the EPA and OSHA, so it is important to know which VOCs are present in polyurea thickeners

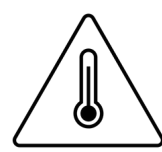
METHODS - QUALITATIVE



METHODS - QUANTITATIVE



GC-MS PROGRAM



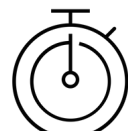
Heat sample to 100°C

Ramp rate of 3°C/minute

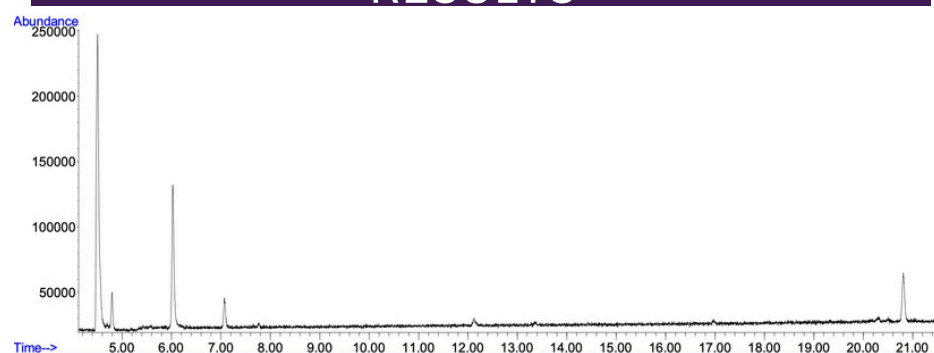


Heat sample to 160 °C

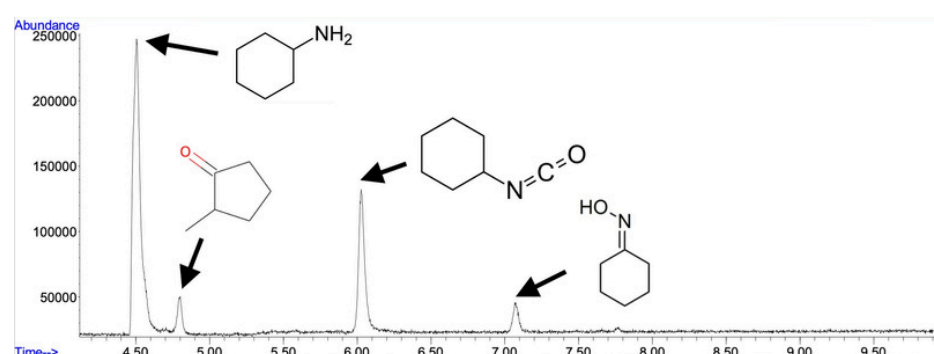
Hold for 15 minutes



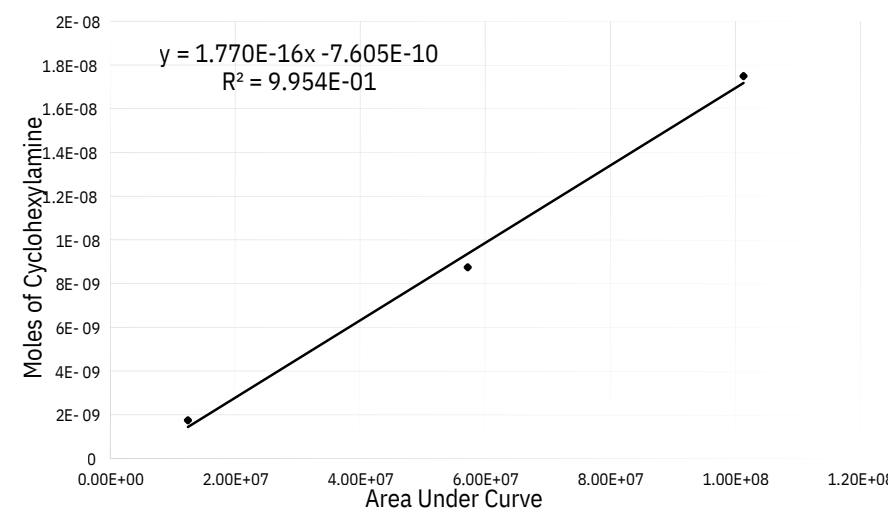
RESULTS



Mass Spec Results



Mass Spec Results – Peaks of Interest



Cyclohexylamine Calibration Curve

Samples	Weight % Cyclohexylamine	Total VOC Weight%
1	6.30%	1.14
2	0.09%	%
3	0.637%	4.94
4	0.088%	%
5	0.002%	0.02
6	-0.016%	%

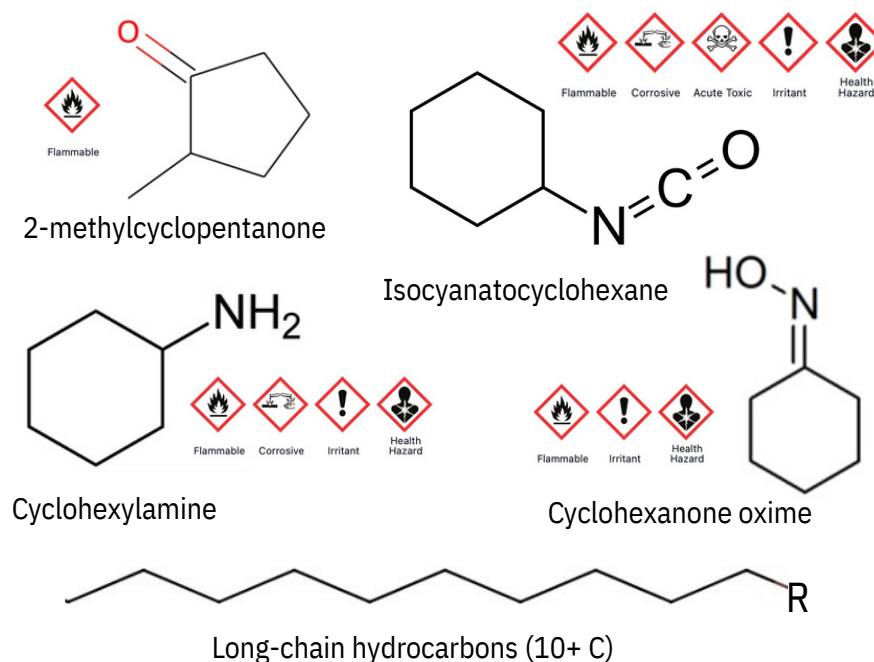
Polyurea Sample Weight Percentages

0.01

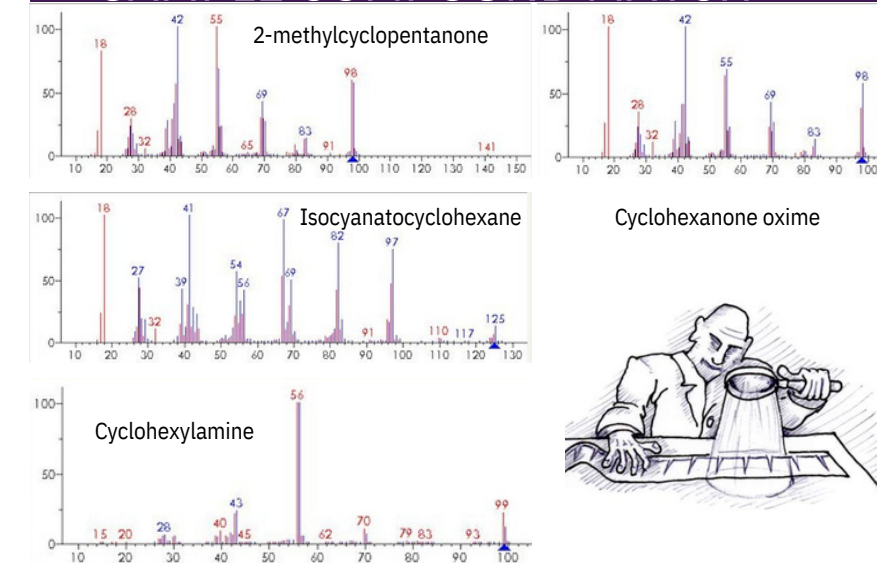
%

0.02

COMPOUNDS FOUND



SAMPLE COMPOUND MATCH



DISCUSSION

- The weight % of the sample is inconsistent
- The sample contains isocyanates
- The sample's range of weight % contains a greater amount of cyclohexylamine than is allowed by regulations

REFERENCES

Centers for Disease Control and Prevention. (2014, April 23). *Isocyanates*. <https://www.cdc.gov/niosh/topics/isocyanates/default.html>

Centers for Disease Control and Prevention. (2019, October 30). *CDC – NIOSH Pocket Guide to Chemical Hazards – cyclohexylamine*. <https://www.cdc.gov/niosh/npg/npgd0168.html>

PubChem. (n.d.). *PubChem*. PubChem. <https://pubchem.ncbi.nlm.nih.gov/>

VIAS Science Cartoons - Mass Spectrometer. (n.d.). http://vias.org/science_cartoons/mass_spectrometer.html

THREE JUDGE-PROPHETS AND WOMEN AS “EZER” IN THE PRE- MONARCHICAL ERA

Paper by Student Name
Sponsored by Dr. Julianne Burnett

PROPHET
AND JUDGE

THESIS: in the old
testament the judge-
prophet figures are
surrounded by
women who
demonstrate what it
means to be an “ezer.”
Christ later fulfills
and affirms this.

MOSES

DEBORAH

SAMUEL

JESUS

Mother, midwives,
Egyptian princess,
sister, Zipporah,
Miriam

Jael (and Deborah
herself)

Hannah

Mary, Elizabeth, and
numerous others

עֶזֶר / Ezer

Typically translated as “helper”
but most often used in military
contexts and sometimes used to
describe God; also used in Genesis
2:18, a common theological origin of
paradigms for women.

Genesis 2:18- “I will make for him an
ezer as his counterpart.”

Psalms 33:20- “God is our ezer and our
shield”

“EZER”
WOMEN

Student Name
Faculty Sponsor:
Dr. Joy Vaughan

WITNESSING THE DIVINE GLORY: AN EXEGESIS OF EXODUS 33:19-23



Thesis: When Moses witnessed the glory of Yahweh, it served as further affirmation of the covenant love with the people of Israel and affirmed the status of Moses as the divine representative.

CONTEXTUAL ANALYSIS

- Ancient Near Eastern *melammu*: radiant sheen, transferable attribute that has a twofold effect: evokes fear and gives credibility of kingship
- Pericope occupies crucial turning point within the Exodus narrative: after Golden Calf incident and in the midst of God threatening to leave the Israelites
- Moses and Elijah's theophanies have striking parallels- occur on a mountain, lessened exposure (veiling vs brevity), the cleft of the rock (in vs out)
- Mount of Transfiguration connects Moses and Elijah's theophanies with Jesus- shows temporality of divine veiling



DETAILED ANALYSIS

- All of God's goodness passes before Moses- His glory *is* His goodness
- Theophany is the pivot from covenant renewal petition to practice- like the institution of the Abrahamic covenant, God reveals Himself as a promise that He will be faithful to His chosen people. He once again declares His name and character.

FORMAL ANALYSIS

- Anthropomorphism addresses problem/solution
- "Face" as hypostasis- divine veiling required
- "Face to face" shows closeness of relationship

REFLECTION

- Intercession is grounded in friendship with Yahweh, risking your own reputation and safety on behalf of another
- Moses interceded for specific people, Jesus interceded for all people. Moses' intercession reinstituted the covenant, Jesus' intercession fulfilled the covenant
- Veiling is sparing judgement, not cloaking questionable traits
- Outpourings show covenant faithfulness in the waiting, sparking repentance and hope



A Story of Diaspora

"Humanity has dwelled in Diaspora since its exile from the Garden of Eden, establishing a constant and deep longing for the notion of Home in the human heart."

A Survey of Advocates: Joseph, Esther, & Daniel

- Maintaining Fortitude: Covenantal Identity
- Perseverance: Perfectly Positioned for Good
- Adaptive Tension: Assimilation & Resistance
- Outsiders: Acutely Aware of Diasporic Identity

Considerations for a Diasporic People

Who will you worship?

How has God perfectly positioned you for good?

What is Good News for these people? In this place? In this time?

How are you creating space at your table for those who are acutely aware of their diasporic identity?

eDNA detection of darters (Percidae: Etheostomatinae) in central Kentucky streams

Student & Faculty Sponsor's Names



Introduction

Environmental DNA (eDNA) has rapidly become a firmly established method for detecting organisms of research and conservation interest and promises to greatly increase the ease, efficacy, and scope of ecological studies. Recent works have highlighted the need for carefully tested assays for use in species specific marker studies and thorough vetting of eDNA primers using as many local sequences as available.

In this study, four darter species were chosen for assay development and testing: *E. flabellare*(Fantail darter), *E. caeruleum*(Rainbow darter), *E. blennioides*(Greenside darter), and *P. caprodes*(Logperch). The developed assays were tested in silico with Mega X and ClustalW as well as in vitro with endpoint PCR before environmental water sample testing.

Table 1. Quantitative PCR assays developed for the four darter species.

Target species	Amplicon length (BP)	TM	Oligo	Sequence (5'-3')
<i>E. flabellare</i> (fantail)	118	F	AAGCGAAGAAGCGAGTTAGG	
		R	GGTGCTACGGTCATCACTAATC	
		P	CCACATAAGGCACTGCAGAGAGT	
<i>E. blennioides</i> (greenside)	135	F	TCTCCGTCCTCCAAATAAG	
		R	AATAGGAAGTGTGAGAGAGGCG	
		P	CCTTGCTGGCTCAACTTGGTACT	
<i>E. caeruleum</i> (rainbow)	105	F	GAGTGAGGGTTGCGTTATCTAC	
		R	GAGCCACAGTCATTACCAATCT	
		P	AGAAGCCGCGCTCAAATCCACTGAA	
<i>P. caprodes</i> (logperch)	139	F	CTCCATCAGACAGGCTCAAATA	
		R	CGAATAGAGCGAGGGATGTTAG	
		P	TAGGCTTCGCGTCTCCTTATTGC	

Although none of the fish in this study are threatened or endangered Kentucky is home to five species of federally threatened or endangered fish, including three darter species. The results of this study should prove useful in the eDNA monitoring of these and other threatened and endangered fish species.



Figure 1. A male *Etheostomacaeruleum*(Rainbow darter) photo courtesy jforbes3, iNaturalist.

Methods

Tissue Collection of Target and Non-target Species

Tissue was collected from all target species from both the Cumberland and Kentucky River drainages. Additionally, tissue was collected from nontarget, sympatric species from both Cumberland and Kentucky drainages. Tissue DNA was extracted from each darter species using a DNeasyblood and tissue kit (Qiagen) according to the provided protocol.



Figure 2. *E. blennioides*, (greenside darter) photo courtesy of North American Native Fishes Association.

Sequencing of Target Species

Portions of cytb were amplified from target species using published primers. Sequencing was completed by ACGT (ACTG inc) and conducted in duplicate.

Assay Development and Testing

Partial cytb sequences were aligned with 10 potential sympatric Kentucky darter species using MegaXand Clustal W. F and R primer pairs were developed using PrimerQuest software (IDT) and aligned with sympatric or potentially sympatric species to verify specificity. All primers have at least three mismatches in the F or R primer. Tissue DNA from both Kentucky River and Cumberland River drainages were used.

Field Testing

Three different water samples were collected from Buck Creek. One liter of each sample was filtered and extracted. The developed primers were used to detect the presence of target DNA in the environmental sample.



Figure 3. *E. flabellare* (Fantail darter) photo courtesy of Emilio Concari, Maryland Biodiversity.

Results

Sequencing

Tissue-extracted DNA was used to create the bands for sequencing reactions. The amplicons were sequenced by ACGT (ACGT Inc). Target and non-target cytb sequences were acquired for in silico analysis.

In Silico Testing

The developed assays were aligned with 10 potential sympatric Kentucky darter species using MegaXand ClustalW.

Table 2. Mismatches between *P. caprodes*oligos and 10 sympatric species. KY = Kentucky River drainage, CM = Cumberland drainage, UN = Unknown.

Sympatric species	Drainage	FP	RP	P	%	Seq. acc. #
<i>Percina caprodes</i>	KY	0	0	0	-	KT880217.1
<i>Etheostoma flabellare</i>	KY	4	7	3	82.	KT880219.1
<i>Etheostoma blennioides</i>	KY	3	6	4	3	KT880218.1
<i>Etheostoma caeruleum</i>	KY	6	6	4	81.	KT880220.1
<i>Etheostoma stigmaeum</i>	CR	7	6	5	2	BC
<i>Etheostoma camurum</i>	CR	3	6	4	81.	BC
<i>Etheostomasanguifluum</i>	CR	3	6	5	8	BC
<i>Etheostoma variatum</i>	KY	5	7	4	8	AF289266.1
<i>Etheostoma cinereum</i>	C	4	5	4	80.	AY560356.1
<i>Etheostoma spectabile</i>	M	4	5	4	1	AF045344.1
<i>Etheostoma blennioides</i>	UN	3	7	3	2	BC
	CR				82.	

In vitro testing

F and R primers were first evaluated via a temperature gradient approach to determine optimal annealing temperature. The optimal annealing temperature for each was then used for the specificity reactions.

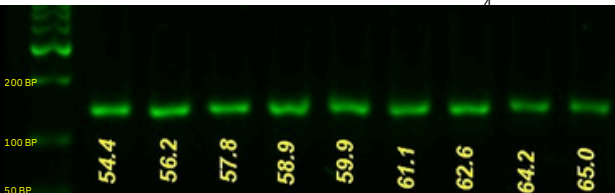


Figure 4. *P. caprodes* gradient reactions.

Specificity tests for each of the primers showed binding only with the target DNA. At optimal annealing temperature, the primers did not bind to the non-target sympatric species (Figure 5).

Results

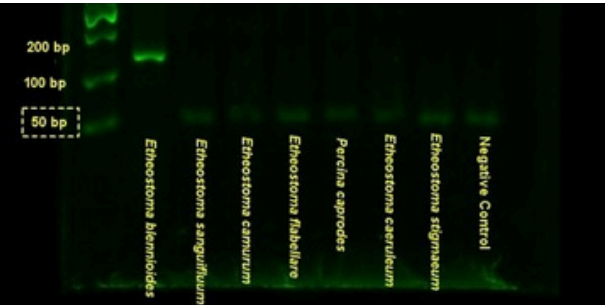


Figure 5. Specificity reactions for *E. blennioides*

Field Testing

Two of the three field collected samples have been processed at this time. *E. caeruleum*DNA was detected in both of the Buck Creek(Pulaski County) environmental samples. *P. caprodes*and *E. flabellare*DNA were each detected in one Buck Creek environmental sample while *E. blennioides*DNA was not detected in any sample.

Conclusions

•All darter assays exhibit significant mismatches with sympatric, but not target, species in testing.

•All darter assays detect target species, but not sympatric species, in *in vitro* testing.

•Initial field testing indicates successful detection of darters in a manner consistent with field observations with the exception of *E. blennioides*.

•Initial sequence analysis appears to indicate lack of detection of *E. blennioides*in Buck Creek (Cumberland River) samples is the result of single nucleotide polymorphisms (SNP's) in Cytbin Cumberland versus KY River drainage (for which assays were created) specimens.

Bibliography

Ficetola, G. F., Miaud, C., Pompanon, F., & Taberlet, P. (2008). Species detection using environmental DNA from water samples. *Letters*, 4(4), 423-425.
Guivas, Ramon, Brammell, B. "Use of Environmental DNA to Determine Fantail Darter (*Etheostomaflabellare*) Density in a Laboratory Setting: Effects of Biomass and Filtration Method" *International journal of zoology* 2020, (2020): -. doi: 10.1155/2020/4731686
Piller, K. R., & Bart Jr, H. L. (2009). Incomplete sampling, outgroups, and phylogenetic inaccuracy: A case study of the Greenside Darter complex *Etheostoma blennioides*Molecular phylogenetics and evolution 43, 369-374.

Acknowledgements

Research was funded by an internal faculty development grant from Asbury University (Ben Brammell, Fall 2021). The Asbury University, Shaw School of Science, Department of Science and Health provided additional support.



Eve's Farewell to Paradise, Richard Westall and Richard Earlom

Depictions of Eve

- ~ Silver etching of Eve in the garden
- ~ Based off of Eve's lament upon learning that they have to leave

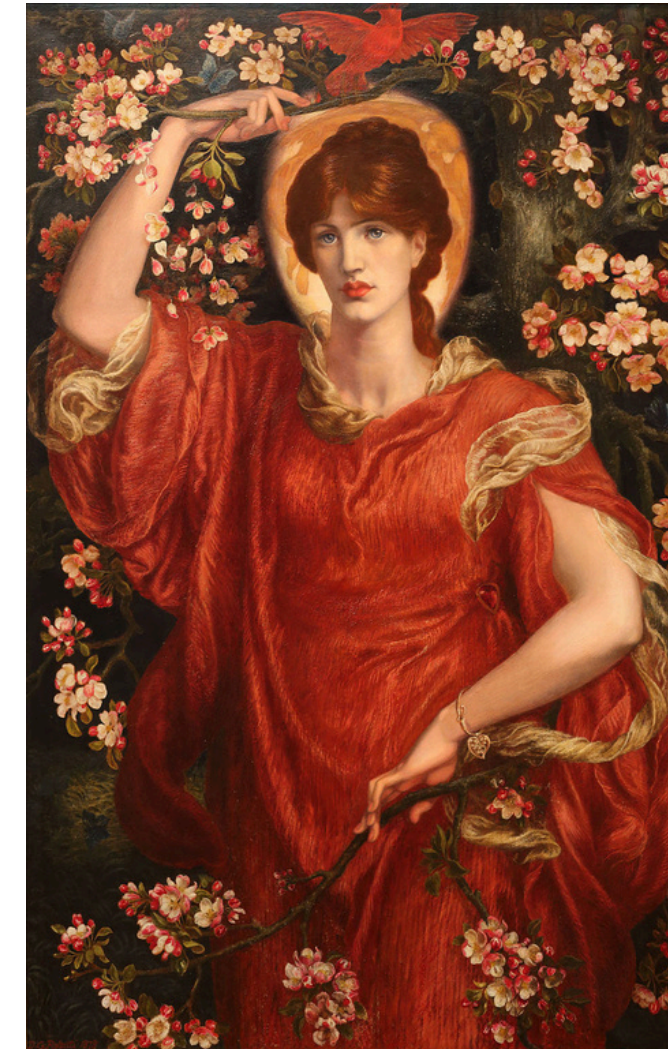
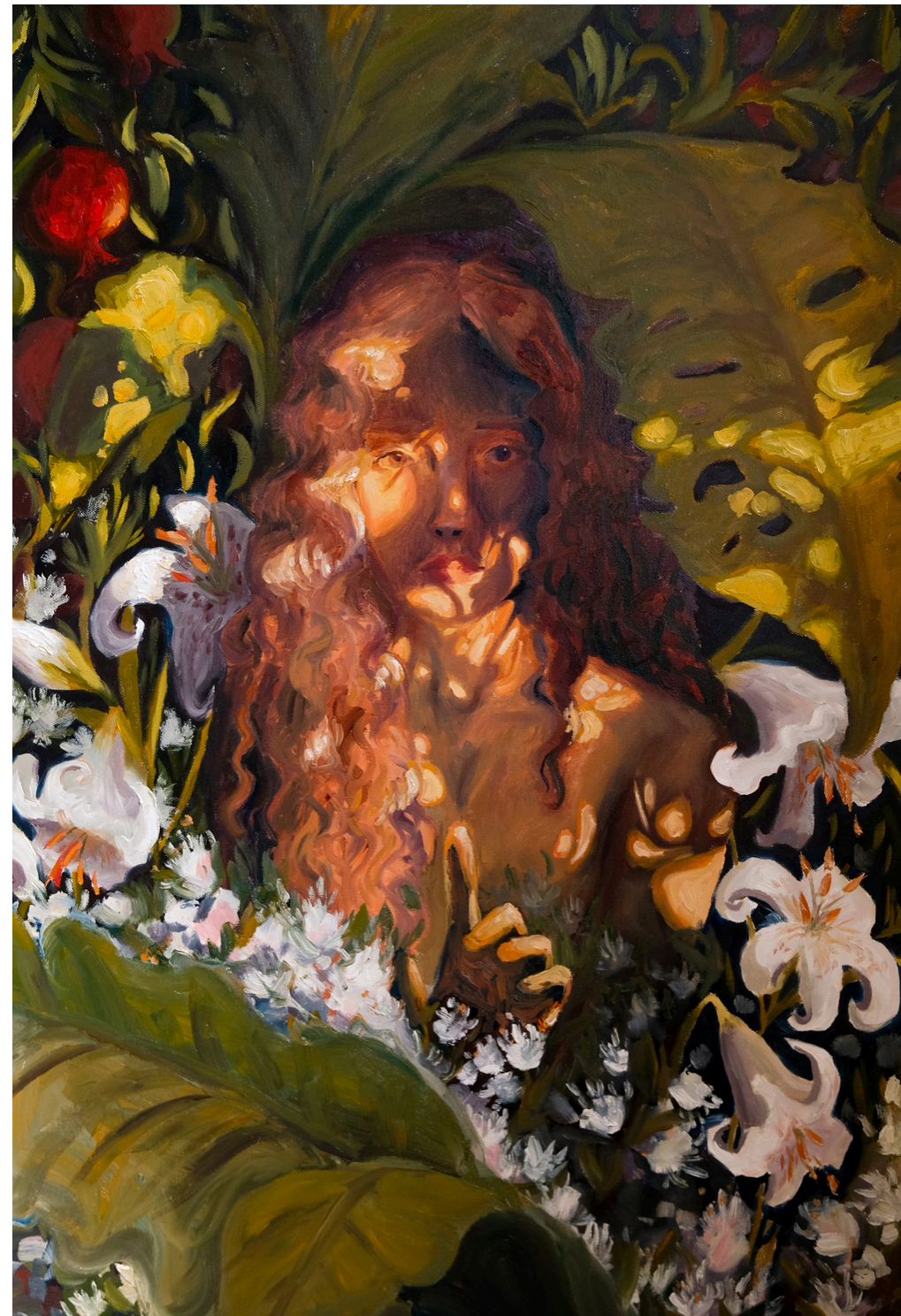
My Work

- ~ Interplay of light and dark
- ~ "I will bring thee where no shadow staies." (4.469)
- ~ Pomegranates: fertility
- ~ Lilies: innocence
- ~ Myrtle: innocence and immortality
- ~ Painting from Satan's perspective

The Eve of Knowing

by Student Name
Faculty Sponsor- Daniel H. Strait, PhD

- ~ Eve, order, and knowing
- ~ Dreamed temptations (5.28), double vision
- ~ Wisdom v.s. knowledge, how far is too far? (9.170-173)
- ~ Decriptions of Eve (4.305 ff.)



A Vision of Fiammetta, Dante Gabriel Rossetti

Pre-Raphaelite Art

- ~ One of the founders of the Pre-Raphaelite Brotherhood
- ~ Themes of beauty and the natural world
- ~ Drawing from literature, mythology, and the Bible for insparation
- ~ Otherworldly woman as subject, idealised
- ~ Rebellion against the modern ideas of art in the 1840's

What biases do we bring to a painting such as this?

ECHOES FROM THE HOLLER:

Nostalgia and Community at Rockhouse Brewing Old Time Jam

Student Name
Dr. Nathan Miller MHL 491-R:
Independent Study April 9, 2024

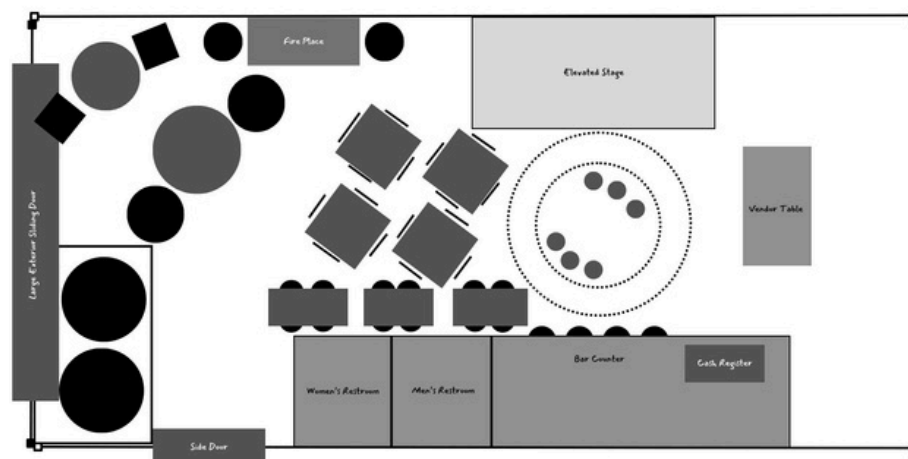
Methodology

I engaged in ethnomusicological fieldwork in order to discover why this community was so vital to its participants. My study included observation, participation, interviews, and bibliographic research.

Old Time Jam at Rockhouse Brewing

25 to 30 people regular participants gather every Monday evening at Rockhouse Brewing. The musicians are always gathered in a large circle that consists of a couple of layers. Instruments are always string instruments with the exception of a drum or spoons. The Jam at Rockhouse would be considered a Formal Jam. It has a designated tune-leader, an agreeable speed, and traditions of how to start and end tunes.

Mapping the Space



Thesis

The old-time jam at Rockhouse Brewing created a participative egalitarian community that nostalgically embodies traditional Appalachian music, culture, and values.



Nostalgia

Nostalgia is a wistful or excessively sentimental yearning for a return to or of some past period or irrecoverable condition. All the stories from participants had a connection to a time in their lives or a specific person who impacted them and/or introduced them to Old-Time music. This music is special in people's lives because of its connection to the past. It's a way to travel to the places they yearn for while building connections to the present and future.

Sharing

Sharing is to partake of, use, or experience, occupy, or enjoy with others. Each of the participants are sharing their time, talent, and experience with each other. Old-Time jams are sharing a culture where many people from Kentucky and the surrounding regions have descended.



Music

Old-Time folk music originated in North America but draws many of its roots from folk music of other countries and continents. Characteristically, this music is played on acoustic instruments. Instruments such as the Banjo, Fiddle, Mandolin, Upright Bass, and Dulcimer. Folk dances such as square dancing, contra dancing, and clogging are often associated with this music, and the traditions developed alongside the music. Old-Time music is traditionally learned by ear in local jam sessions, whether at an impromptu porch gathering or a dance.



Appalachian Culture

Common trades include Cole mining, Lumber Milling, Farming, and Grain Mills. Treacherous Terrain hindered the development of roads that isolated mountain communities. Communities were found in hollers on the sides of mountains away from the lower valleys and rivers that could flood. Because of the isolated regions and the number of tunes that were circulated through so many families, there are many local and regional variations of the same tunes.

HAUNTINGS & HOLLERS:

Folklore, Storytelling & Appalachian Collective Identity

by Student Name | Advisors: Dr. Lisa Weaver-Swartz & Dr. Erin Penner



Left: The Battletown Witch Festival, photo by researcher
Right: Old Gods of Appalachia Logo



01. INTRODUCTION & RESEARCH QUESTION

- The Battletown Witch Festival
- The popularity of folklore and “eerie Appalachia”
- The unique, joyful Appalachian expression of these narratives

HOW ARE APPALACHIANS UTILIZING THE REGION’S FOLKLORE AS A FORM OF EMPOWERMENT AND NEGOTIATION OF THEIR IDENTITY FROM A MARGINALIZED POSITION?



Adam Booth at More Tales Storytelling Festival in Wilmore, KY. Photo by researcher

02. METHODS

This study utilized participatory methodologies (Berdou 2012; Hockey and Forsey 2012; Salmon 2007) to bridge the gap between researcher and subject in a region where research has historically been extractive

- Survey (180 respondents)
- Focus Groups & Supplementary Interviews (20 participants)
- Content Analysis

All qualitative data has been analyzed using thematic coding (Charmaz 2007).

04. FINDINGS

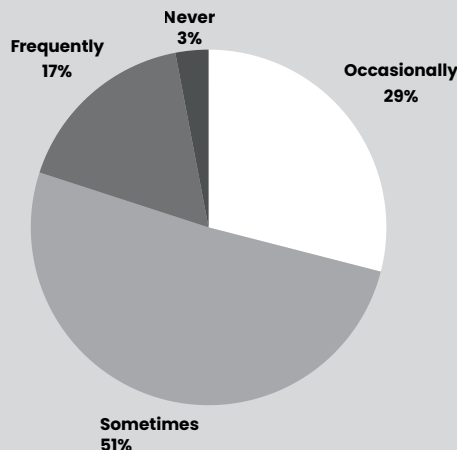
- THE CURRENCY OF STORYTELLING
 - Cohesion with Appalachians & attention from outsiders
- FOLKLORE AS EXPRESSIONS OF TRAGEDY
 - Appalachian mortality rate ages 15-64 is 34% higher than the rest of the nation (55% for ages 35-44), and this is an improvement compared to earlier years.
 - Grappling with infrastructural oversight, exploitation, natural disasters, sudden death, etc.
- LAUGHING AT THE THINGS THAT SCARE YOU
 - “Putting a monster on” intangible forces
 - Entertainment, levity, and humor
- THE MOTHMAN & TEXTURED STORIES
 - Mothman and the Silver Bridge - Point Pleasant, WV, 1966-1967
- MEDIA AND IN-PERSON STORYTELLING
 - *Old Gods of Appalachia* & the podcast medium
 - Bidirectional storytelling spaces



Above: Anonymous photo submission to WCHS News
Below: The scene of the Silver Bridge Collapse in 1967. (Photograph from the West Virginia State Archives).

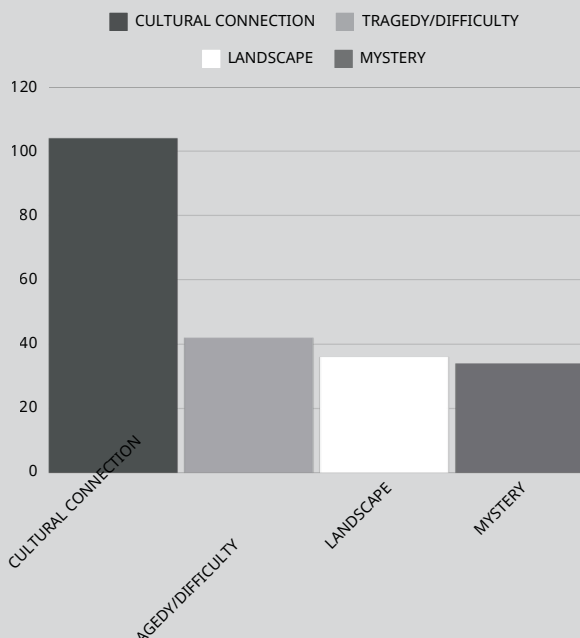
03. SURVEY DATA

Initial survey findings were used to get a better idea of the popularity of these narratives and why respondents felt they were significant.



“How often do you encounter supernatural or darker narratives about Appalachia?”

Themes: “Why do you think folklore and darker stories are so prevalent in Appalachia?”



05. CONCLUSION

Folklore and darker narratives provide ways of grappling with the dark aspects of Appalachian history and its ongoing struggle; reclaiming those struggles as sources of levity, entertainment, and even humor. The darkness and levity of these narratives resist Appalachia’s historically victimizing representation. By “Putting a monster on” the abstract forces of oppression and harm, they make these abstract forces concrete. They make the intangible tangible and thereby surmountable.

Edward Hopper's Eye for Women

Student Name

Advisor: David R. Swartz, Ph.D.

Abstract

Edward Hopper was an early 20th-century painter who is most famous for his scenes of isolation and night. **How Hopper portrayed women changed alongside American society. His views were formed during the late nineteenth century, they were challenged by his wife, and they opposed social movements during the 20th century.** His art went from rigidly resenting female dominance to portraying working women. While women were objectified throughout his artworks there is a trend from passive portrayals of women to active portrayals.

Edward and Jo Hopper, 1933



Photograph by Louise Dahl-Wolfe
The Whitney Museum of American Art

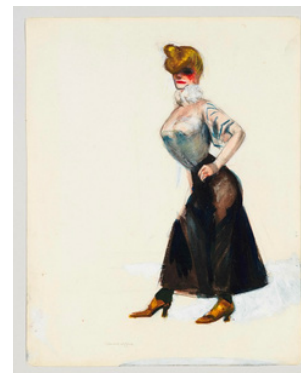
Conclusion

In conclusion, even though Edward Hopper's views of women did not change, the way he portrayed women in his art changed as his wife challenged him and societal movements occurred. While female subjects tended to be sexualized throughout his art, there is a trend from passive portrayals to active portrayals of women. Hopper's early art demonstrated resentment towards women whereas his later art portrays liberated women in the workforce.



Study of Landlady and Boarders at the Dinner Table, 1895-1899
Whitney Museum of American Art

The landlady's ridged angles and stern face contrast with the men's softer lines and turned-down faces.



Fille de Joie, 1906-1907
Whitney Museum of American Art

The dramatic sloping shape of the Paris prostitute's figure exaggerates her curves.



The Great God Arthur ("Status Quo"), 1932 in Edward Hopper an Intimate Biography (New York: Alfred A. Knopf)

The scale of Jo and Arthur are larger than Hopper's scrawny body.



Office at Night, 1940
Walker Art Center

The man is sitting at the desk while the woman is in clothes that accentuate her body.



Summertime, 1943
Delaware Art Museum

The light draws the eyes to the woman's chest and her sheer dress exposes her thigh as she stands confidently.

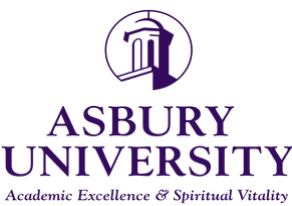


Jo in Wyoming, 1946
The Whitney Museum of American Art

Jo's painting is incomplete and seems novice compared to the car's interior.

Antibacterial Effects of Herbal Infusions

Student Name and Marvin Ruffner, Ph.D.
Asbury University, Shaw School of Sciences, Wilmore, KY 40390



Introduction

The Lamiaceae family plants have been found to contain polyphenols, iridoids, terpenoids and other bioactive compounds.^{4,6,7} Knowing this, would plants of this family produce antibacterial effects as infusions? The basis of the query is research on black, green, and herbal teas that have demonstrated antibacterial activity.^{1,2,5} The purpose of this study was to test the hypothesis that herbal infusions would inhibit bacterial growth. Four herbal infusions were derived from: *Lamium purpureum* (purple deadnettle), *Glechoma hederacea* (ground ivy), *Lamium amplexicaule* (henbit deadnettle), and *Mentha spicata* (spearmint). The infusions were tested against bacteria using Kirby-Bauer disc diffusion assays. The bacteria studied were *Escherichia coli*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, and *Staphylococcus aureus*. Antibiotics and sterile water served as positive and negative controls, respectively.

Methods

- Plants collected, washed, and air dried ~ 7 days
 - Stem, leaves, flowers
- Steeped 10g of dried plant material/125mL deionized boiling water for 6 minutes
- Strained to remove debris
- Kirby-Bauer disc diffusion assay on Mueller-Hinton agar; Antibiotic positive controls: vancomycin,

ciprofloxacin and gentamicin, and H₂O as negative

Results

- control: 7-10 mm inhibition zones from all teas.
- 1 way ANOVA p values:
 - Culture plates incubated at 37°C for 20 hrs
 - S. aureus*: 0.7700
 - K. pneumoniae*: 0.0929
 - P. aeruginosa*: 0
 - E. coli*: 0.0460
- Tukey-Kramer: $Q_{bt} < 4.76$ (Q_{crit})
 - Water-*L. purpureum*: 3.165
 - Water-*G. hederacea*: 4.747
 - Water-*L. amplexicaule*: 4.352
 - Water-*M. spicata*: 4.747

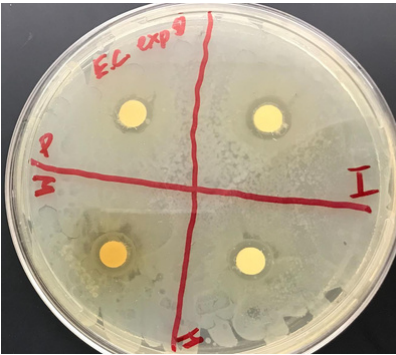


Fig 1 (left):
E. coli
experimental
plate

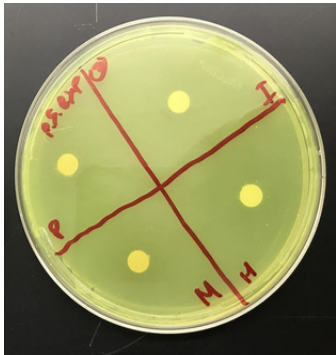


Fig 2 (right):
P. aeruginosa
experimental
plate

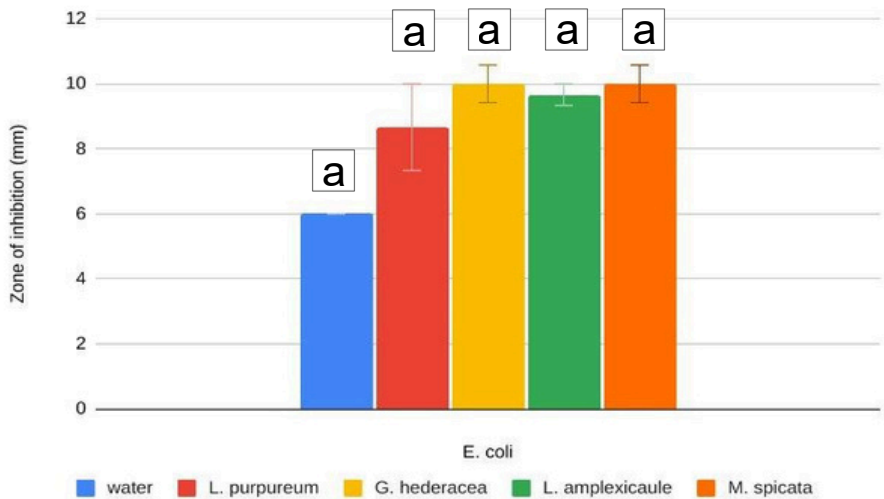


Fig 3 (above): average inhibition zone data on *E. coli*, with Tukey-Kramer result

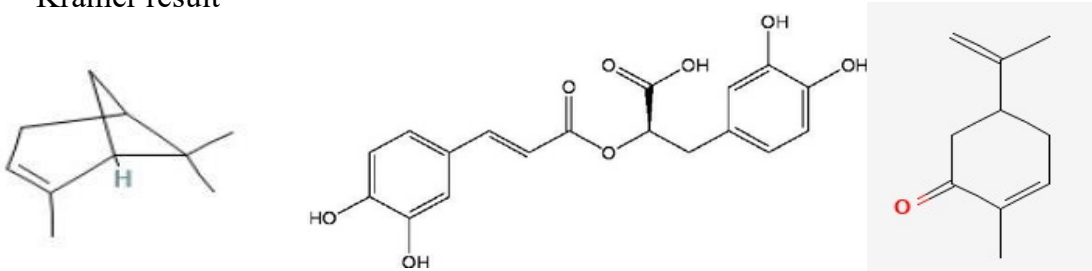


Fig 4-6 (above): α -pinene, rosamarinic acid, and carvone

Fig 7-10 (below): *Lamium purpureum*, *Mentha spicata*, *Glechoma hederacea*, and *Lamium amplexicaule*



Photo licensed under CCYYSA.



Photo licensed under CCYYSA.



Photo licensed under CCYYSA.



Photo licensed under CCYYSA.

Conclusions

- Some herbal infusions tested at concentrations of 0.07-0.08 g/mL exhibited visible antibacterial activity.
 - E. coli* appears to be the most susceptible
 - P. aeruginosa* showed no susceptibility
 - The *G. hederacea* infusion appears to be the most effective, followed by *L. amplexicaule* on average across bacteria species
- No statistically significant difference between water control and herbal infusions were detected through Tukey-Kramer analysis
- Further replication is needed to produce more powerful statistics and consistent results
- Future research would consist of assessing teas at higher concentrations on different bacterial species
 - interest in chemical analysis

Bibliography

- Bancirova M. 2010. Comparison of the antioxidant capacity and the antimicrobial activity of black and green tea. Food Research International. 43(5):1379–1382.
- Chan Eric WC, et al. 2011. Antioxidant and antibacterial properties of green, black, and herbal teas of *Camellia sinensis*. Pharmacognosy Research. 3(4):266.
- Cowan MM. 1999. Plant Products as Antimicrobial Agents. Clinical Microbiology Reviews. 12(4):564–582.
- Danijela Šeremet, et al. 2023. Studying the Functional Potential of Ground Ivy (*Glechoma hederacea* L.) Extract Using an In Vitro Methodology. International Journal of Molecular Sciences. 24(23):16975–16975. doi: <https://doi.org/10.3390/ijms242316975>.
- Hacıoglu M, et al. 2017. Antimicrobial activities of widely consumed herbal teas, alone or in combination with antibiotics: an in vitro study. PeerJ. 5:e3467. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10707382/#B15-ijms-24-16975>.
- Khan N, Mukhtar H. 2018. Tea Polyphenols in Promotion of Human Health. Nutrients. 11(1):39. doi: <https://doi.org/10.3390/nu11010039>.
- Salehi B, et al. 2019. Lamium Plants-A Comprehensive Review on Health Benefits and Biological Activities. Molecules (Basel, Switzerland). 24(10). doi: <https://doi.org/10.3390/molecules24101913>. <https://pubmed.ncbi.nlm.nih.gov/31109023/>.

Acknowledgements

Dr. Marvin Ruffner, and the Asbury University,
Shaw School of Science.

Empowering Teachers to Serve ALL Students in Inclusive Classrooms

Student Name | Mentors: Allie Rhodes, PhD. and Christel Broady PhD.



Introduction to Exceptional Learner

In this class we...

- Learn what special education is and the importance of dealing with the learning needs of students with disabilities and gifted/talented students.
- Developing skills to design instruction, assess student learning, analyze student progress and achievement, diagnose learning needs, and learn strategies that are evidence based.

Learner Outcomes

- This class helps students understand those who are gifted and those who have emotional, physical, High intellectual, or sensory disabilities.
- Leverage Practices (HLP's) and Accommodations & Modifications
- Understand what IDEA is and the six principles of IDEA.
- Accommodations, Notebook: IDEA definition, accommodations/modifications, HLP's, and any other information about each topic.

Inquiry

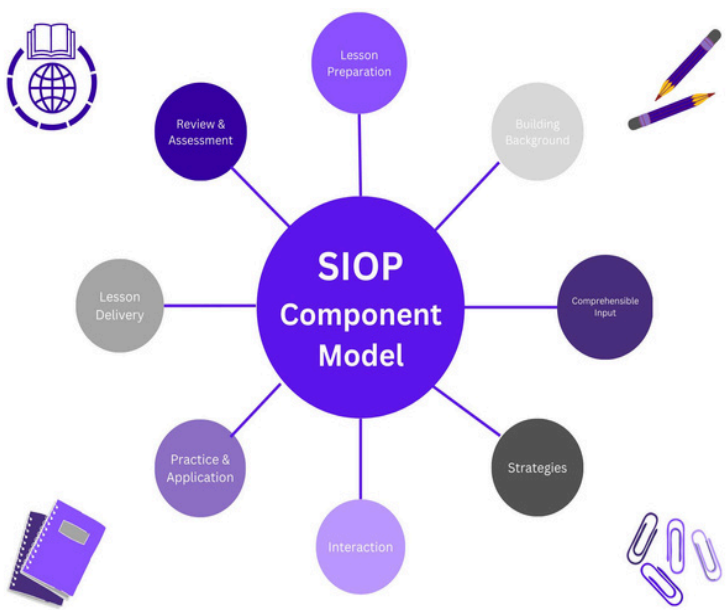
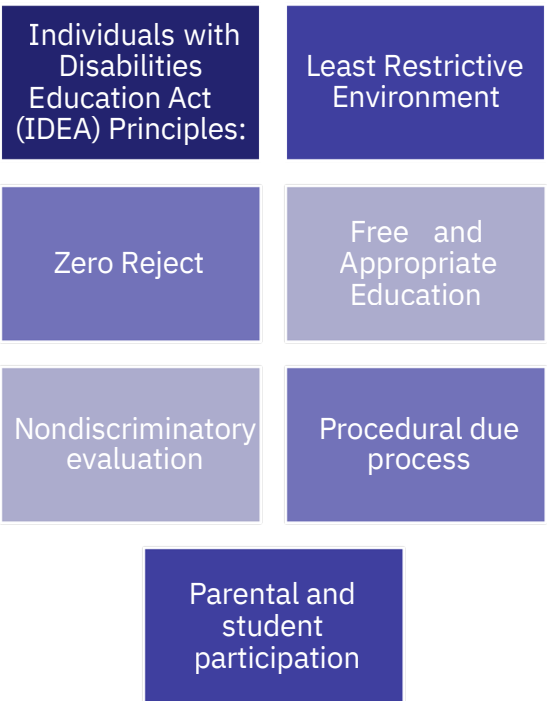
What are some commonalities between courses taught in the School of Education?

What are some differences that have been observed in these courses?

How can we modify an existing course to include these commonalities and differences?

Commonalities

Leadership and Law



Introduction to Facilitating EL Success

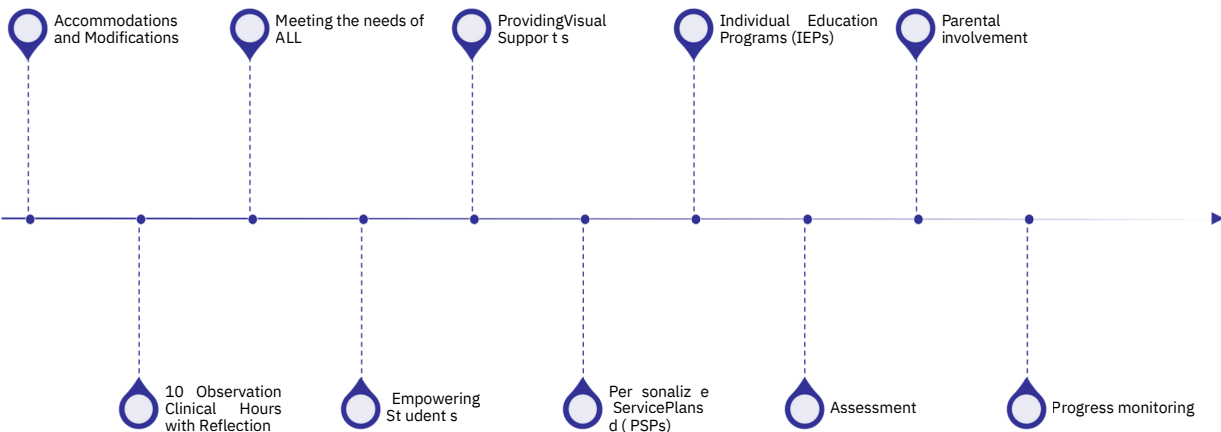
In this class we...

- The importance of what an ESL program is and how it benefits students so well.
- Without ESL programs, there would be language struggles and affect how students learn in school.
- Sheltered Instruction Observation Protocol (SIOP)
 - English Language Development (ELD) Standards Framework (WIDA) are proficiency assessments for grades K-12

Learner Outcomes

- This class is designed to allow you to create resources that you can take with you to your future classrooms to be a more effective teacher.
- ESL Flowchart: home language survey for placement, LPAC meeting, screener test, parental involvement, and then accommodations.

Collaboration and Advocacy



Conclusion

Because of the common strands of both programs to train coaches, mentors, leaders, and advocates, both professors designed a co-taught common graduate course for initial and advanced teacher candidates that focuses specifically on

- Coaching
- Mentoring
- Leading
- Advocating
- And administering programs making data-based decisions.

This course is offered to Special Education and English as a Second Language graduates and initial students. Not only does the course teach the concepts mentioned above. It goes one step further in that it is co-taught by both professors to model co-teaching in inclusive classrooms to students.

Loving Herself, Regardless:

How Alice Walker and Lucille Clifton Reclaim Black Female Embodiment



Author: Student Name SEARCH Faculty Advisor: ErinPenner
Scholarship and Christianity in Oxford Research Advisor: Alice Stainer

“Womanist”

A Black feminist who “Loves music. Loves dance. Loves the moon. Loves the Spirit. Loves love and food and roundness. Loves struggle. Loves the Folk. Loves herself. Regardless.”
-Alice Walker, In Search of Our Mothers’ Gardens



I. Methodology and Context: What is Womanism?

- developed in 1979 by Alice Walker through her short story “Coming Apart”
- distinct from feminism, which often prioritizes white women’s rights and ignores women of color
- recognizes the need for a more intersectional form of feminism which centers Black women in the fight against racism and sexism
- reimagines embodiment outside of white beauty standards
- reclaims the Black female body as an act of liberation



Divine Venus, April Bey, 2016

II. Alice Walker and Embodiment as Celebration in “Coming Apart”

- wards off external shame and embraces inward joy through her bold cry for a celebration of the body
- questions what sort of bodies are desirable and if there are limitations to desirability
- recenters the aging, Black female body as desirable and beautiful
- includes a transformation of the husband’s relationship with his body as an example of how womanism extends outward to all people

IV. Clifton’s Stages of Embodiment

Puberty

- rejects shame by acknowledging that excitement and abuse are both experiences that have shaped her relationship with her body

Motherhood

- reclaims motherhood as a form of Black joy while also being honest about the fear that comes from a lack of resources and support for Black mothers

Aging

- grief becomes entwined with love as Clifton mourns the earlier versions of herself that she has outgrown

III. Lucille Clifton: Grief as a Form of Self-Love

- challenges the assumption that radical inward joy is the only form of self love
- offers an honest picture of her relationship with her body, making room for a multitude of women’s histories and experiences
- examines different stages of life through her poetry, arguing for internal grief as an act of loving herself

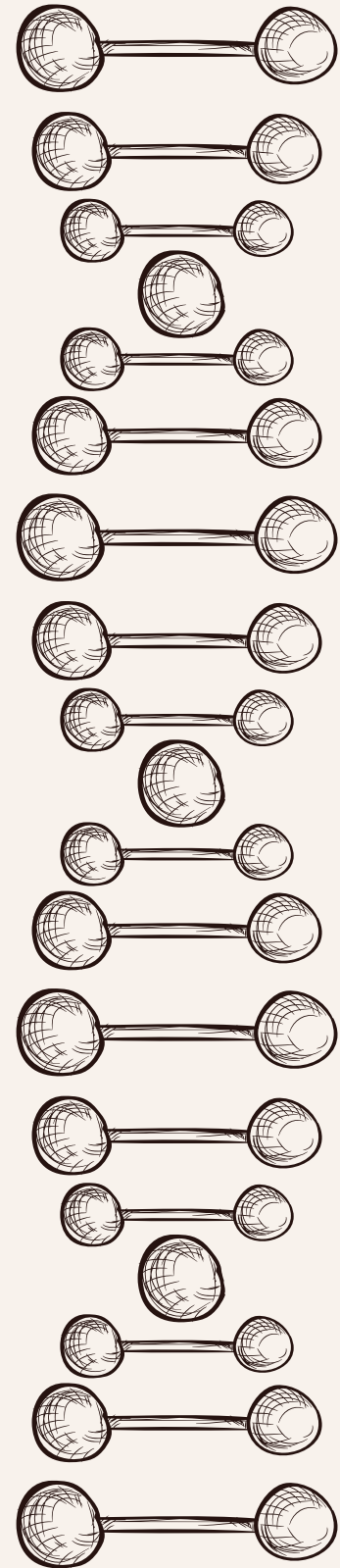


Lucille Clifton and Alice Walker

Student Paper Submissions

DUE by Tuesday, March 10, 2026
@ 5 p.m.





Student Paper Submission Specifications

DUE?

- Paper PDF due Tuesday, March 10 by 5 p.m. with an abstract for your poster/paper (summary of what it covers)

WHEN?

- SEARCH Symposium is April 8 & 9, 2026

REQUIRED?

- To be eligible for cash prizes
- Faculty sponsor
- Must also submit a poster (on same topic)
- Only 1 person as author

Student Paper Submission Specifications

SIZE and FORMAT:

- **Must submit in .pdf format
- Include a title page with your title, names, & name of your faculty sponsor – only include names on the title page (not in the header/footer)
- The title should be clear and central on the first page of your paper
- Typed; double-spaced; include page numbers
- Clear font, no smaller than Times New Roman, 12 pt.
- Each student is limited to 1 paper



Sample Title Page

**Determination of Epigallocatechin Gallate (EGCG) Content in Commercial Branded
Green Tea Extract (GTE) and Loose-Leaf Green Tea**

A Senior Paper Presented to The Department of Chemistry
Asbury University

In partial fulfillment of the Requirement for the Degree
Bachelor of Science

By Jiaru Liu

October 17, 2024

Dr. Bruce Branan

Include:

- Title of the Paper
- Your Name
- Your Faculty
Sponsor's Name

Sample First Page

1

Eugenics, Breeding, and the Nature of Man

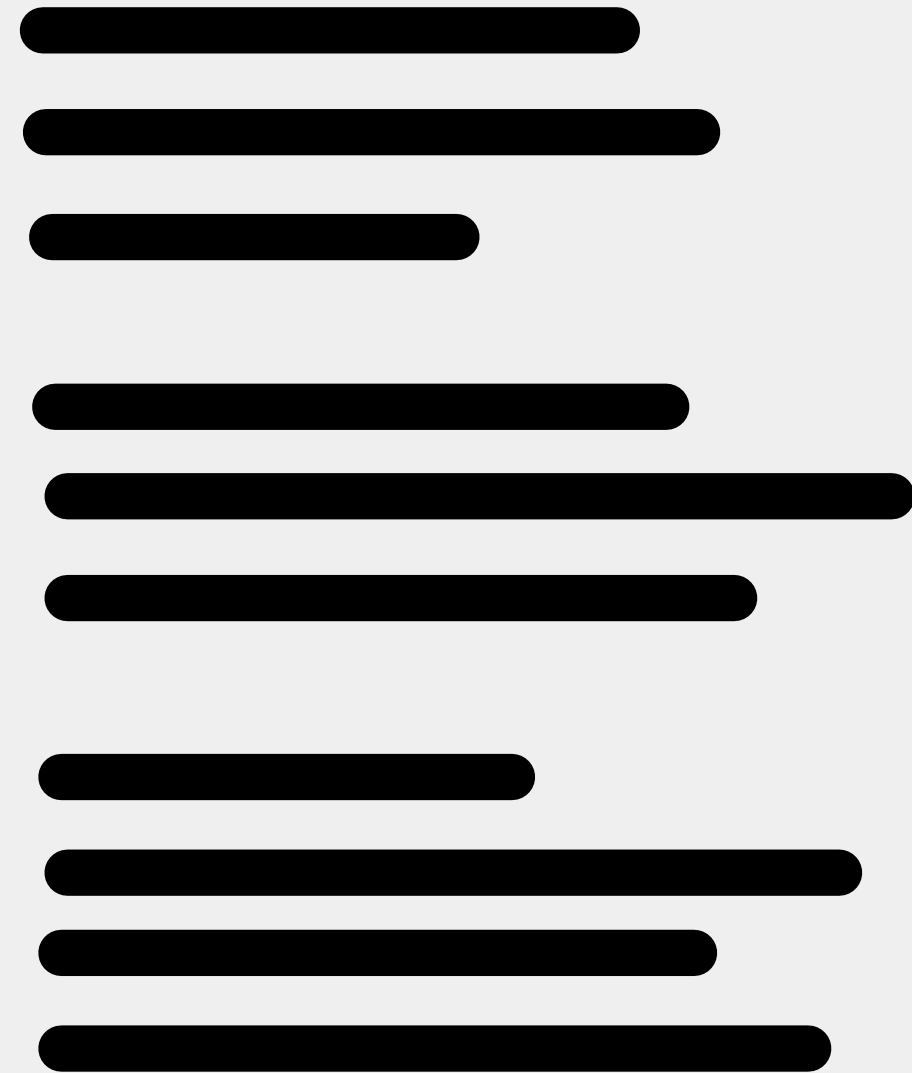
There is perhaps no desire more prevalent at the very core of humanity than the drive for improvement. The methods by which we seek, for which purposes, following whose guidance, all points that throughout history and daily practicality consistently come into conflict. While there have been numerous large-scale attempts at betterment of the human race, none surpass the efforts of the National Socialist Regime together with radicalized ideas brought up through the area of study known as Eugenics. In this paper, I hope to offer a relatively untraversed look into the National Socialist German Worker's Party's endeavors to create a superior Aryan race, thus

Include:

- Title of the Paper
- Page #

Do NOT Include:

- Your Name
- Your Faculty Sponsor's Name



Paper Content Considerations



01

CREATIVITY

02

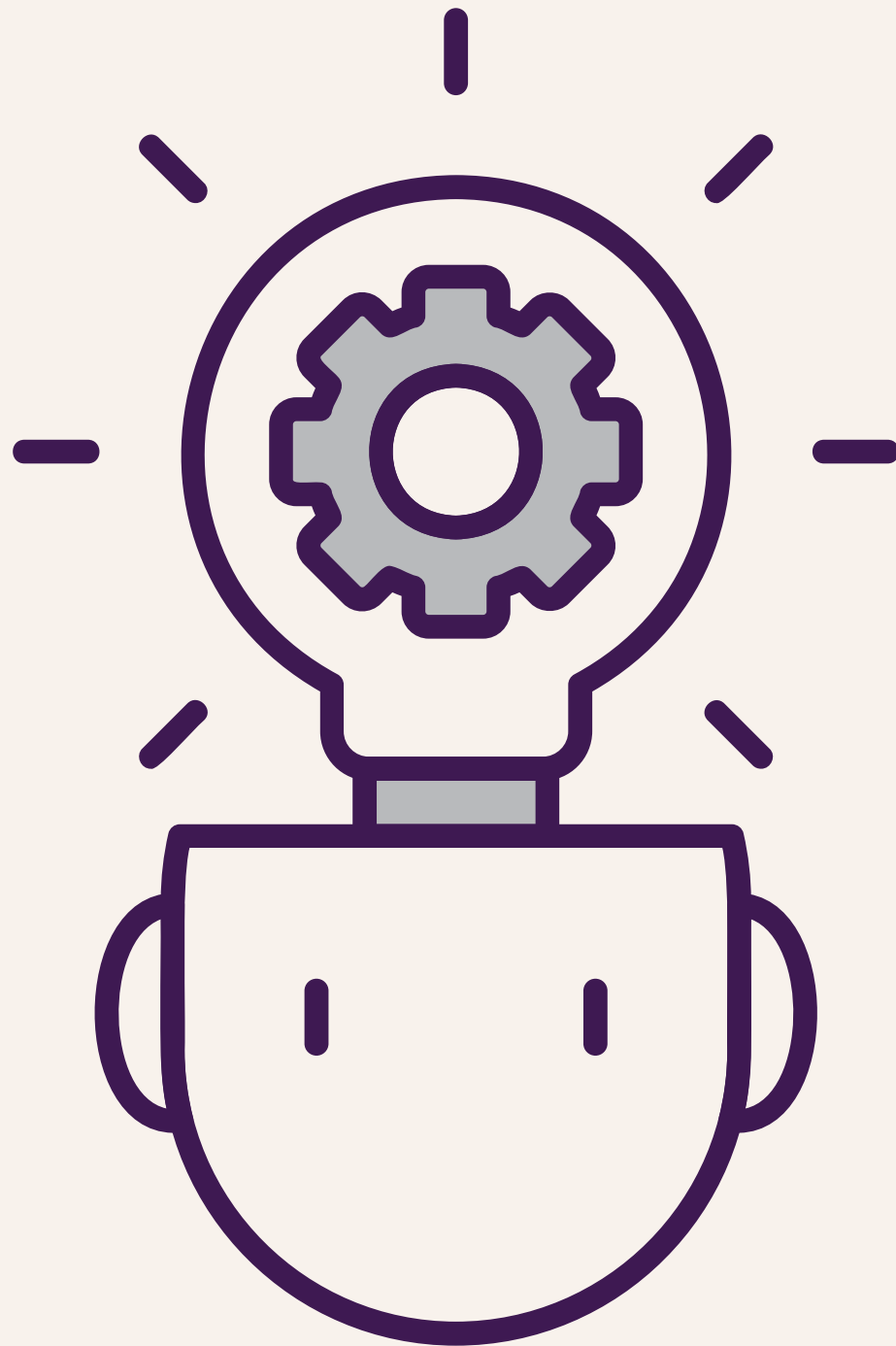
LITERATURE REVIEW / CONTEXT

03

ORGANIZED

04

PROPER CITATIONS



Paper Reasoning Considerations

01

CRITICAL THINKING

02

PROBLEM SOLVING

03

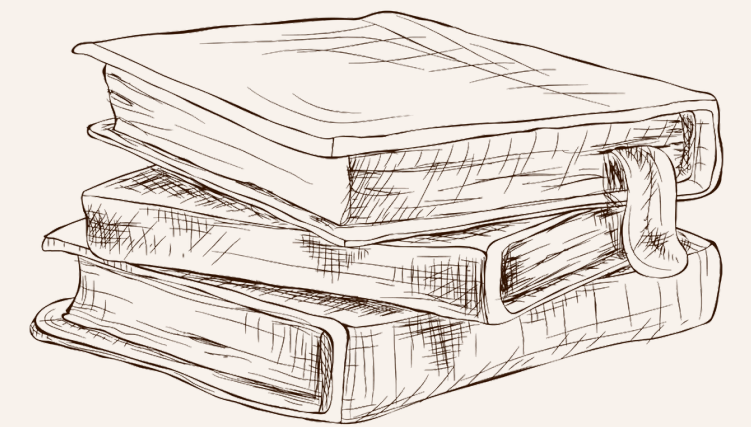
LOGICAL DEVELOPMENT

04

RESEARCH

05

CLARITY



Paper Reflection Considerations

01

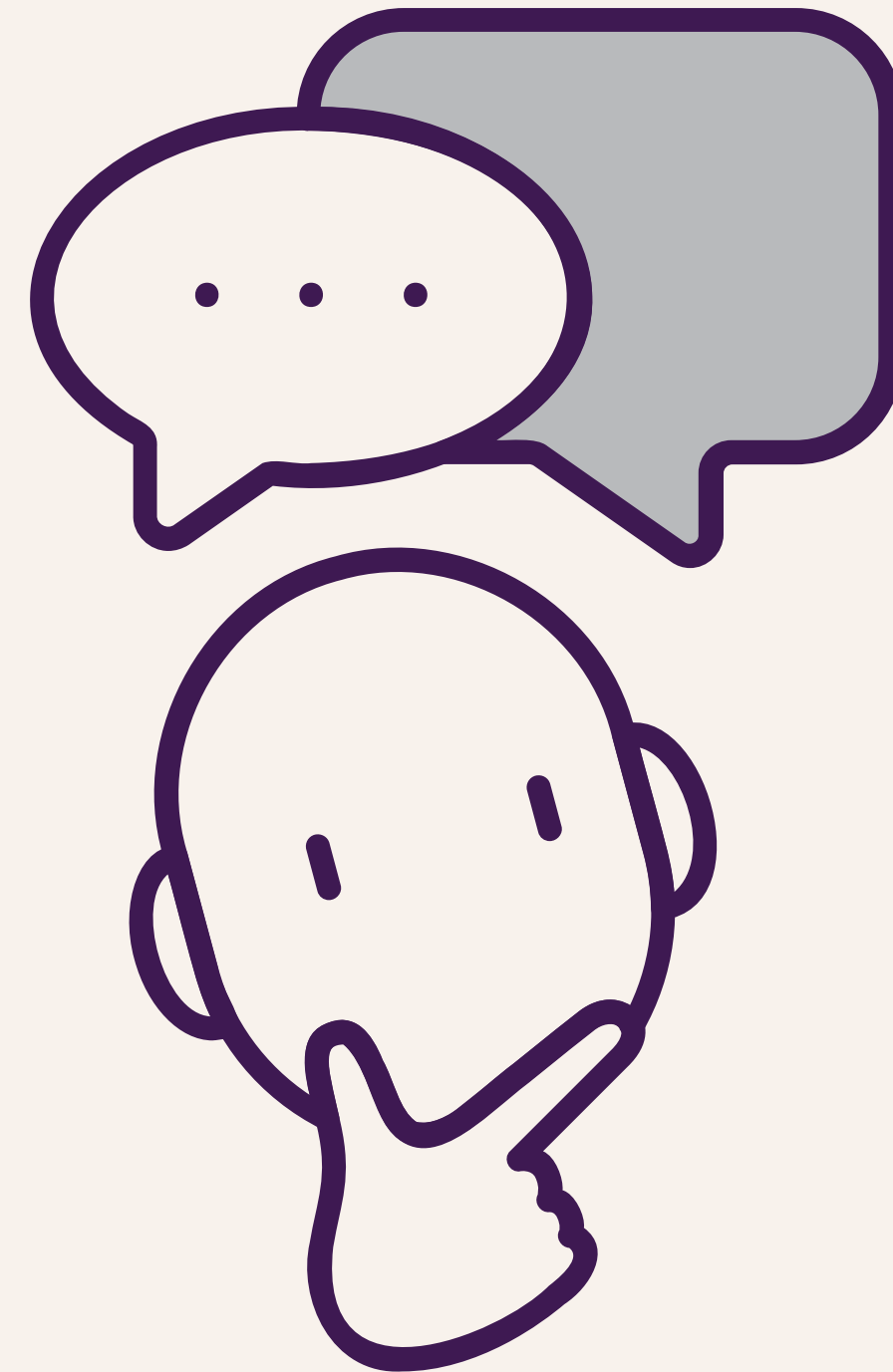
IMPORTANCE

02

BALANCE - NOT BIAS

03

CONNECTIONS



What if my project is more creative?

- You can still submit to SEARCH
- Poster would demonstrate your work, etc.
- There MUST be a written research component
 - Literature Review
 - what research did you do?
 - Artist's Statement
 - what skills did you learn?
 - who/what influenced you?
 - Aim for a minimum of 5 pages



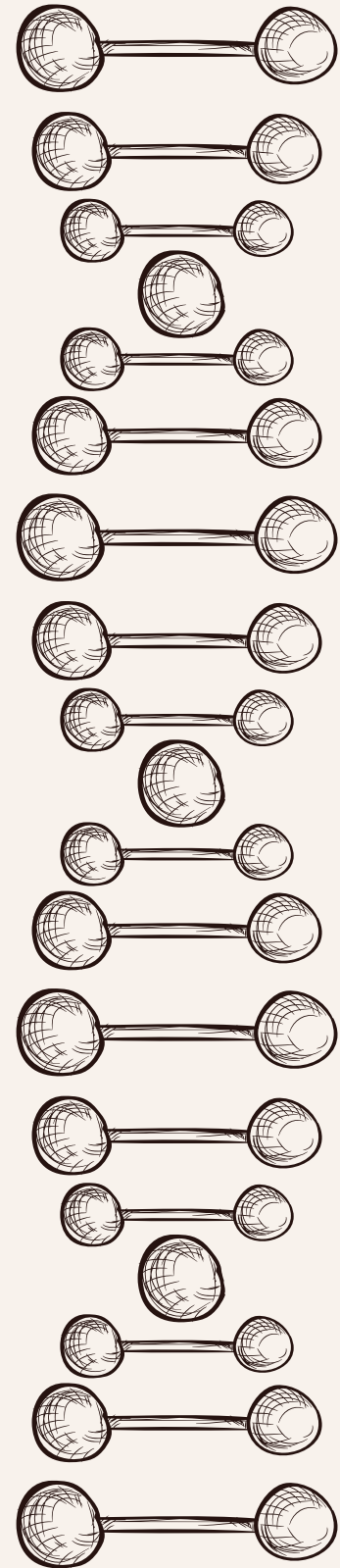
Group Papers

- Group paper submissions are allowed. The ideal group size is 2-5 students.
- All group submissions will be evaluated using the current paper submission rubric (traditional/creative).
- Group submissions are NOT currently eligible for the cash prize.
- The top-ranked group will receive certificates and acknowledgement at the Academic Honors Convocation.
- Group submissions WILL designate one student as the main contact for SEARCH.
- Groups MUST also provide this additional information upon submission:
 - Briefly describe the roles each group member played in the creation of the project/artifact.
 - Describe the challenges you faced in working as a group (approximately 200 words).
 - Identify and briefly describe (2-3) the benefits you derived from working collaboratively (apprx 350 words).



Faculty Sponsor Information





Faculty Sponsor Specifications

- ALL posters / papers MUST have a faculty sponsor
 - Ideally a faculty member who specializes in the area of the research
- Work with the student to improve upon their paper & create the digital poster
- It is assumed that all submitted papers will be written / researched at least a "B" academic level
- Double check the poster meets size & other submission requirements
- Work with the student to write their abstract
- Assist with IRB approval, if needed
- Notify SEARCH if student already has printed copy of poster

Important Dates



01

February 20, 2026
Deadline to Apply for IRB
Approval

02

March 10, 2026 @ 5 p.m.
Posters & Papers are DUE

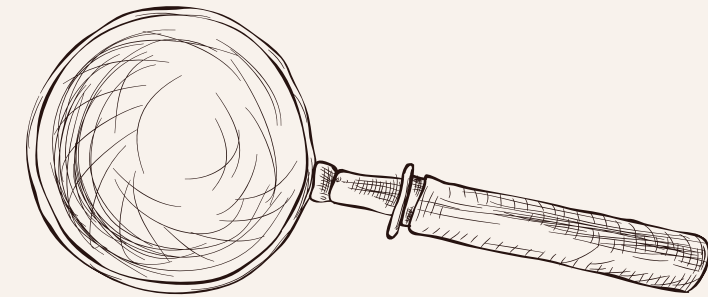
03

April 8 & 9, 2026
SEARCH Symposium

April 9, 2026
Keynote Lecture @ 7 p.m.
Student Showcase @ 8 p.m.



SEARCH
annual symposium



Thank you!

Questions?

search@asbury.edu

