Fiat Lux

A Celebration of Florida Southern College
Student Scholarship and Research

April 16, 2025
12:00pm–7:20pm

The Ashley Gibson Barnett Museum of Art
at Florida Southern College

Sponsored by the Florida Southern College Chapter of the Honor Society of Phi Kappa Phi

This page intentionally left blank.

Fiat Lux

A Celebration of Florida Southern College Student Scholarship and Research

April 16, 2025

Welcome!

Florida Southern College fosters an environment where students actively transition from being consumers of knowledge to becoming scholars who create new knowledge, insights, connections, and understanding. For over 20 years, our students have gathered at the end of each semester to present and discuss the scholarly work they have been doing in and beyond their courses.

The goal of Fiat Lux is twofold: to provide students a platform for their ideas, and to provide the wider community a window into the creative and intellectual energy that pervades our campus. Today's event provides a singular opportunity to publicly share the meaning and joy of scholarly inquiry.

We encourage you to take part in as many sessions as you can! Enjoy the conversation.

Schedule

12:00-12:20	Welcome in AGB Auditorium	Dr. Carrie Ann Hall
	Preliminary Remarks	Provost Tracey Tedder
	Introduction of Emerge Scholars	Dr. Kristen Carter
12:20-1:20	Keynote Address	Dr. Alex Rich
	Where Disciplines Collide!: Museums as Experiential Sites for Scholarship, Expertise, and Learning Across Fields	
	Summary Remarks	Associate Provost Roxanne Back
1:40-2:40 & 3:40-4:40	Poster Presentations	First Floor
1:40-7:20	Presentations	Auditorium, Classroom 1, Classroom 2, Creative Lab, England Gallery, Penfield Library, Photography Gallery

Fiat Lux at Florida Southern College

This page intentionally left blank.

2025 Fiat Lux Presenters – By Last Name

Room	Time	First Name	Last Name	Major	Title
Classroom 2	3:40-4:00	Brenda	**Alvarez**	Political Science	(Un)Necessary Military Spending
Photography Gallery	6:40-7:00	Brenda	**Alvarez**	Political Science	A Collaborative Advising Tool for Florida Southern Students
Classroom 1	4:20-4:40	Hannah	**Atkinson**	Theatre Arts: Theatre Performance	Pleasure Through Tragedy
Classroom 1	4:00-4:20	Zara	**Bahrainwala**	Nursing	How Perceived Stress Correlates with Resilience Among BSN Students at Florida Southern College
Penfield Library	5:00-5:20	Caroline	**Bennington**	English and Spanish	El Papel del Convento en Desengaños Amorosos de María de Zayas (The role of the convent in Desengaños Amorosos by Maria de Zayas)
England Gallery	3:20-3:40	McKenna	**Blevins**	Chemistry	Design of a Reusable Cu(II) MOF with Increased Adsorption Capacity for Herbicide Remediation
Photography Gallery	4:00-4:20	Sophia	**Brice**	Marine Biology	Can Anemones Fight Back? Predator-Prey Analysis of the Aeolid Nudibranch Berghia stephanieae and Glass Anemone Exaiptasia diaphana
Photography Gallery	5:40-6:00	Jackson	**Busch**	Philosophy	The Metaphysical Imperativeness of Thomistic Transubstantiation: An Exploration of the Eucharist
Classroom 1	3:40-4:00	Mary	**Cannon**	Nursing	Mental Health and Coping in College Students by Major
England Gallery	7:00-7:20	Genevieve	**Chaon**	Biotechnology	Why So Stressed? The Impact of Environmental Stressors on Aquatic Microorganisms
Penfield Library	1:40-2:00	Adam	**Cruz**	Exercise Science	The Effect of Sleep on Athletic and Cognitive Performance
England Gallery	3:00-3:20	Ghita	**Diani**	Chemistry	Development and Implementation of a Thiol-Functionalized ZIF-8 Lead Detection System for Cosmetics
Penfield Library	5:20-5:40	Abram	**Dy**	Exercise Science	Effects of Jocko Go on Measures of Cognitive Function
Classroom 2	6:00-6:20	Alana	**Evans**	English	How the Internet has Evolved Audiences: An Examination of Pokémon as a Transmedia Narrative
Classroom 1	4:40-5:00	Kylie	**Fowler**	Religion: Youth Ministry	Worship Wars
England Gallery	5:40-6:00	Eleora	**Funk**	English	Magnispiralis: Playwriting on Florida and the Contemporary South
Creative Lab	2:20-2:40	Olivia	**Gallagher**	Environmental Studies	Using iNaturalist to Survey Native Pollinator Species Presence in Polk County
England Gallery	1:40-2:00	Natalie	**Garrison**	Biochemistry and Molecular Biology	A “Greener” Wittig Reaction Using Solid Support Synthesis via the Optimization of Procedure and

2025 Fiat Lux Presenters – By Last Name

					Reduction of Triphenylphosphine Oxide
Creative Lab	2:00-2:20	Abigail	**Ghaly**	Business Administration	Exploring the Intersection of Neuroscience and Criminal Responsibility
Auditorium	2:20-2:40	Joseph	**Giannone**	Art History and Museum Studies	Art Unfelt: Public Disconnections to Abstract Art in Museums
Penfield Library	2:20-2:40	Lily	**Giliam**	Biology	Investigating the Effect of Novel Visual Stimuli as a Form of Environmental Enrichment in Zoo-Housed Psittacidae
Penfield Library	2:00-2:20	Elizabeth	**Griffin**	Biology	Classification and Analysis of Antibiotic Properties of Unknown Species of Chromobacterium
England Gallery	4:40-5:00	Riley	**Gwinnup**	Chemistry	Utilization of Gelatin-Based Conjugates as a Drug Delivery System for the Treatment of Cutaneous Squamous Cell Carcinoma
Auditorium	2:40-3:00	Shelby (Gracie)	**Hamlin**	Studio Art	Moving On
England Gallery	4:20-4:40	Peyton	**Hanser**	Chemistry	Electrochemical Sensor Modification for the Detection of Carbamazepine
Photography Gallery	3:40-4:00	Kaliyah	**Henderson**	Environmental Studies	Investigating Microplastic Presence in Coral Sediments of the Mesoamerican Reef, Roatán, Honduras
Penfield Library	6:00-6:20	Douglas	**Holmes**	Business Administration	The Benefits of Capitalism and Limited Government
Classroom 2	4:20-4:40	Alexander	**Holt**	Political Science	The Hardest Time: Analysis of El Salvador's Prison System
England Gallery	2:20-2:40	Halle	**Humbaugh**	Chemistry	Using a Quantitative UV-Vis Spectrophotometer Analysis to Determine Significant Differences Between the Antioxidant Capabilities of Synthetic and Natural Flavonoid Molecules
Classroom 2	2:40-3:00	Sunny	**Hunt**	Political Science	Fractured America: The Transformation of Republican Campaigning
Classroom 2	2:00-2:20	Hanna	**James**	Political Science	Comparing Populism in the 2016 Election
England Gallery	6:20-6:40	Riley	**Karau**	Graphic Design	Typography Speaks: An Inclusive Look Into the History and Language of Type in Graphic Design
Penfield Library	3:20-3:40	Kathryn	**Kelly**	Biology	Substrate and Light Color Preferences in Combination in Camponotus ants
Photography Gallery	3:00-3:20	Molly	**Kennedy**	Marine Biology	You Are What You Eat: Using Molecular Tools to Study Tapeworm Life Cycles in Young-of-the-Year Bull Sharks Carcharhinus leucas

2025 Fiat Lux Presenters – By Last Name

Penfield Library	4:20-4:40	Reese	**Laird**	Biology	The Role of Visual and Acoustic Sensory Cues in the Shell Selection Process of the Caribbean Hermit Crab
Classroom 1	3:00-3:20	Lexi	**Lapore-Paternostro**	Pre-Law	A Voir Dire Situation: A Research Proposal about Jury Selection in America
Auditorium	6:20-6:40	Tianna	**Lewis**	Dance	Beauty in Motion: Philosophical Theories and Their Reflection in Dance
Penfield Library	4:40-5:00	Ashleigh	**Lowery**	Biology	An Expanded Assay of the Evolutionary History of Visual Genes in the Freshwater Microcrustacean, Daphnia
Classroom 1	7:00-7:20	Jaclyn	**McFadden**	Marine Biology	Claw-ver Crustaceans? Maze Learning and Memory in Leptuca pugilator
England Gallery	2:40-3:00	Jenna	**McHardy**	Chemistry	Greener Modification to the Wittig Reaction to Produce Stilbene Molecules for Anticancer Testing in Pancreatic Cells
Classroom 1	5:40-6:00	Melanie	**Mendieta**	Political Science	History in Flames and Blood: The Burning of Sacred Mayan Texts by Friar Diego de Landa and the Continuous Violence Against Indigenous People in the Americas
Classroom 2	4:00-4:20	Melanie	**Mendieta**	Political Science	La Revolución Traicionada: Nicaragua's Democratic Dreams Deferred
Classroom 2	6:20-6:40	Olivia	**Migliorato**	English	Exclusive Shakespeare: The Intersection of Race and Gender in Shakespeare's "Antony and Cleopatra" and "Titus Andronicus"
Photography Gallery	2:40-3:00	Olivia	**Miles**	Marine Biology	How Does Total Fish Length Affect Monogenean Abundance in Freshwater Tilapia, Oreochromis spp.
Classroom 2	1:40-2:00	Solana	**Millik**	Political Science	Stochastic Terrorism and Fox News: The Animal on the Nation's TV
Classroom 2	3:00-3:20	Olivia	**Mitchell**	Political Science	Pages of Controversy: The Rise in Moralization of Politics and Book Bans
Classroom 1	5:20-5:40	Brianna	**Moore**	Religion	Faith in Crisis
Auditorium	6:00-6:20	Abigail	**Murray**	Theatre Arts: Technical Theatre/Design	The Stories We Need To Tell: Creating a Florida Southern Fringe Festival
Classroom 2	6:40-7:00	Emma	**Mussante**	Sport Business Management	Fan Engagement and Experience in Minor League Baseball: A Case Study of the Lakeland Flying Tigers
Photography Gallery	1:40-2:00	Kala	**Nelson**	Music: Performance	E(Mode)tional: On the Emotional Implication of Non-Diatonic Modes in the Western Classical Tradition

2025 Fiat Lux Presenters – By Last Name

Classroom 2	3:20-3:40	James	**Nguyen**	Political Science	Instability in the Democratic Republic of the Congo
Photography Gallery	5:00-5:20	Emily	**Opalinski**	Environmental Studies	The Effects of Nylon, Dibutyl Phthalate, and Bisphenol A on the Zooxanthellae Abundance in the Exaiptasia Anemone
Photography Gallery	5:20-5:40	Alex	**Ortiz**	Communication and Spanish	"DeBí TiRAR MáS FOToS": Bad Bunny and the Voices of Modern Latin America
Photography Gallery	6:20-6:40	Courtney	**Parrish**	Spanish	Feminine Resistance, Gender Violence, and Sexuality: Ana Maria Rodas
Classroom 1	6:40-7:00	Alizee	**Pelletier**	Mathematics	How External Factors Impact Student Athletes in their Performance and Prediction, Swimming Focused
Classroom 2	5:20-5:40	Anika	**Petam**	Nursing	Patient Perception of Therapeutic Communication in Adult End-stage Renal Disease Patients
Penfield Library	2:40-3:00	Daniel	**Ramirez**	Biology	Prevalence of Mosquito-Borne Parasites Around Lake Hollingsworth
Classroom 2	5:40-6:00	Sofia	**Restom Gaskill**	Theatre Arts	A Modern Electra: Adapting the Tragedy of Electra and Orestes
Photography Gallery	6:00-6:20	Alex	**Richardson**	Computer Science	Exoplanet Exploration With Machine Learning for Kepler Survey Data
Auditorium	1:40-2:00	Nicole	**Richmond**	Music: Performance	Guided Listening of the Dies Irae and its Transcendence Through Time
Classroom 1	2:20-2:40	Benjamin	**Ruby**	Communication	Music and the Classroom: An Evaluation of Music's Effect on College Students
England Gallery	5:00-5:20	Jazmin	**Salmeron**	Biochemistry and Molecular Biology	Sustained Release of Diclofenac and Ketorolac from a Gelatin Hemostatic Matrix
Classroom 1	6:00-6:20	Krishnaa	**Sardeshmukh**	English	Kavya-Rahasya: The Emergence of Contemporary Indian Poets
Classroom 1	1:40-2:00	Grace	**Saunders**	Nursing	Experiences of Psychiatric Nurses Who Have Been Assaulted by a Patient
Penfield Library	4:00-4:20	Kendall	**Schafer**	Biology	Skin Microbiota and Acne Vulgaris: Examining the Prevalence, Interactions, and Susceptibilities of Species among Facial Lesions
Classroom 1	2:00-2:20	Logan	**Schultz**	Communication	Promotional Motivations in Collegians' Concert Attendance
Creative Lab	2:40-3:00	Shelby	**Scott**	Marine Biology	The Effects of Predicted Climate Change Temperature and pH Conditions on Aiptasia pallida Symbiont Densities
Photography Gallery	4:20-4:40	Jacob	**Sells**	Marine Biology	The Role of Native and Non-Native Sedge Species in Phosphorus Retention in Wastewater Treatment Wetlands

2025 Fiat Lux Presenters – By Last Name

Classroom 1	2:40-3:00	Emi	**Shannon**	Music: Performance	The Effect of a Blue Mind Intervention on College Student Well-Being
Penfield Library	3:40-4:00	Kelsey	**Slone**	Biology	Heavy Metal Removal from Wastewater by Wetland Vegetation
Penfield Library	5:40-6:00	Mikayla	**Smith**	Business Administration	Walt Disney's Influence and Effect on the Art of Animation
Auditorium	2:00-2:20	Trey	**Snell**	Humanities	Judas I Love You
Classroom 2	7:00-7:20	Sydney	**Silva**	Graphic Design	The Impact of an Image
Photography Gallery	3:20-3:40	Mara	**Taylor**	Marine Biology	Comparative Analysis of Parasite Communities Within Native and Invasive Snails in Central Florida
Penfield Library	3:00-3:20	Haley	**Thomassy**	Biology	Analysis of Outcomes of Infants with Neonatal HSV Based on Acyclovir Dosing Regimen
Photography Gallery	2:20-2:40	Coral	**Tolman**	Marine Biology	Diving Into Sedimentation: How Intermittent Sedimentation Indicative of SCUBA Diving Affects Corals Growth and Physiology
Photography Gallery	2:00-2:20	Karla	**Van Loon**	Music: Performance	Comparing Cultural Practices of Western, African, and South Indian Music
Photography Gallery	4:40-5:00	Francisco	**Vargas**	Biotechnology	A Semi-Quantitative Comparison of DMRT Expression Among Distinct Populations of Nematostella vectensis
England Gallery	4:00-4:20	Zion	**Virgil**	Chemistry	Optimizing DNA Extractions from Aged Bloodstains Deposited onto Cotton Fabric in Tropical Conditions
Creative Lab	5:00-5:20	Gracie	**Wakefield**	Political Science	Do Protests Improve Women's Rights in Authoritarian Societies in the Middle East?
Classroom 2	4:40-5:00	Amy	**Walker**	Political Science	Erosion of Democracy: Analyzing Donald Trump's Impact on Democratic Institutions in the United States
England Gallery	6:40-7:00	Laura	**Wallender**	Elementary Education	Investigating How Fine-Motor Skills Interventions Improve Fine-Motor Development in First Grade Students
Classroom 2	2:20-2:40	Isaac	**Wardyn**	Political Science	How Twitter Made America Great Again
Classroom 2	5:00-5:20	Trent	**Warnock**	Political Science	The Reign of Terrorists: Hay'at Tahrir al-Sham and its Future
England Gallery	2:00-2:20	Avriana	**Watson**	Biochemistry and Molecular Biology	Design of Antibiotic Chalcone Structures via Inhibition of S. Aureus DNA gyrase
England Gallery	6:00-6:20	Macy	**Wilcox**	Biochemistry and Molecular Biology	The Development of an Electropolymerized Film for the Detection of the Mycotoxin, Citrinin
Classroom 1	5:00-5:20	Hailyn	**Williams**	Religion	Is Jesus Wisdom?

2025 Fiat Lux Presenters – By Last Name

England Gallery	5:20-5:40	Kaianna	**Wintter**	Chemistry	An Approach to a Less Destructive Extraction of Amphetamines from a Hair Sample
Classroom 1	3:20-3:40	Michael	**Yuska**	Psychology	The Relationship of Emotional Intelligence and Cohort Differences on Burnout and Academic Performance in a Collegiate Setting
Penfield Library	6:20-6:40	Santiago	**Zuniga**	Accounting	A Qualitative Analysis of Ethics Training and Industry Internships in Shaping STEM Students' Ethical Identity
Penfield Library	6:40-7:00	Santiago	**Zuniga**	Accounting	Modern Monetary Theory by an Amalgam of the Government Budget Constraint and the Dynamic Equation of Exchange
England Gallery	3:40-4:00	Tanzwikwa	**Zviitwah**	Biochemistry and Molecular Biology	The Detection of Trimethoprim Using Electropolymerized Molecularly Imprinted Polymers

2025 Fiat Lux Presentations – By Room

Auditorium

1:40-2:00	Nicole	Richmond	Music: Performance	Guided Listening of the Dies Irae and its Transcendence Through Time
2:00-2:20	Trey	Snell	Humanities	Judas I Love You
2:20-2:40	Joseph	Giannone	Art History and Museum Studies	Art Unfelt: Public Disconnections to Abstract Art in Museums
2:40-3:00	Shelby (Gracie)	Hamlin	Studio Art	Moving On
6:00-6:20	Abigail	Murray	Theatre Arts: Technical Theatre/Design	The Stories We Need to Tell: Creating a Florida Southern Fringe Festival
6:20-6:40	Tianna	Lewis	Dance	Beauty in Motion: Philosophical Theories and Their Reflection in Dance

Classroom 1

1:40-2:00	Grace	Saunders	Nursing	Experiences of Psychiatric Nurses Who Have Been Assaulted by a Patient
2:00-2:20	Logan	Schultz	Communication	Promotional Motivations in Collegians' Concert Attendance
2:20-2:40	Benjamin	Ruby	Communication	Music and the Classroom: An Evaluation of Music's Effect on College Students
2:40-3:00	Emi	Shannon	Music: Performance	The Effect of a Blue Mind Intervention on College Student Well-Being
3:00-3:20	Lexi	Lapore-Paternostro	Pre-Law	A Voir Dire Situation: A Research Proposal about Jury Selection in America
3:20-3:40	Michael	Yuska	Psychology	The Relationship of Emotional Intelligence and Cohort Differences on Burnout and Academic Performance in a Collegiate Setting
3:40-4:00	Mary	Cannon	Nursing	Mental Health and Coping in College Students by Major
4:00-4:20	Zara	Bahrainwala	Nursing	How Perceived Stress Correlates with Resilience Among BSN Students at Florida Southern College
4:20-4:40	Hannah	Atkinson	Theatre Arts: Theatre Performance	Pleasure Through Tragedy
4:40-5:00	Kylie	Fowler	Religion: Youth Ministry	Worship Wars
5:00-5:20	Hailyn	Williams	Religion	Is Jesus Wisdom?
5:20-5:40	Brianna	Moore	Religion	Faith in Crisis

5:40-6:00	Melanie	Mendieta	Political Science	History in Flames and Blood: The Burning of Sacred Mayan Texts by Friar Diego de Landa and the Continuous Violence Against Indigenous People in the Americas
6:00-6:20	Krishnaa	Sardeshmukh	English	Kavya-Rahasya: The Emergence of Contemporary Indian Poets
6:40-7:00	Alizee	Pelletier	Mathematics	How External Factors Impact Student Athletes in their Performance and Prediction, Swimming Focused
7:00-7:20	Jaclyn	McFadden	Marine Biology	Claw-ver Crustaceans? Maze Learning and Memory in Leptuca pugilator

Classroom 2

1:40-2:00	Solana	Millik	Political Science	Stochastic Terrorism and Fox News: The Animal on the Nation's TV
2:00-2:20	Hanna	James	Political Science	Comparing Populism in the 2016 Election
2:20-2:40	Isaac	Wardyn	Political Science	How Twitter Made America Great Again
2:40-3:00	Sunny	Hunt	Political Science	Fractured America: The Transformation of Republican Campaigning
3:00-3:20	Olivia	Mitchell	Political Science	Pages of Controversy: The Rise in Moralization of Politics and Book Bans
3:20-3:40	James	Nguyen	Political Science	Instability in the Democratic Republic of the Congo
3:40-4:00	Brenda	Alvarez	Political Science	(Un)Necessary Military Spending
4:00-4:20	Melanie	Mendieta	Political Science	La Revolución Traicionada: Nicaragua's Democratic Dreams Deferred
4:20-4:40	Alexander	Holt	Political Science	The Hardest Time: Analysis of El Salvador's Prison System
4:40-5:00	Amy	Walker	Political Science	Erosion of Democracy: Analyzing Donald Trump's Impact on Democratic Institutions in the United States
5:00-5:20	Trent	Warnock	Political Science	The Reign of Terrorists: Hay'at Tahrir al-Sham and its Future
5:20-5:40	Anika	Petam	Nursing	Patient Perception of Therapeutic Communication in Adult End-stage Renal Disease Patients
5:40-6:00	Sofia	Restom Gaskill	Theatre Arts	A Modern Electra: Adapting the Tragedy of Electra and Orestes
6:00-6:20	Alana	Evans	English	How the Internet has Evolved Audiences: An Examination of Pokémon as a Transmedia Narrative

6:20-6:40	Olivia	Migliorato	English	Exclusive Shakespeare: The Intersection of Race and Gender in Shakespeare's "Antony and Cleopatra" and "Titus Andronicus"
6:40-7:00	Emma	Mussante	Sport Business Management	Fan Engagement and Experience in Minor League Baseball: A Case Study of the Lakeland Flying Tigers
7:00-7:20	Sydney	Silva	Graphic Design	The Impact of an Image

Creative Lab

2:00-2:20	Abigail	Ghaly	Business Administration	Exploring the Intersection of Neuroscience and Criminal Responsibility
2:20-2:40	Olivia	Gallagher	Environmental Studies	Using iNaturalist to Survey Native Pollinator Species Presence in Polk County
2:40-3:00	Shelby	Scott	Marine Biology	The Effects of Predicted Climate Change Temperature and pH Conditions on Aiptasia pallida Symbiont Densities
5:00-5:20	Gracie	Wakefield	Political Science	Do Protests Improve Women's Rights in Authoritarian Societies in the Middle East?

England Gallery

1:40-2:00	Natalie	Garrison	Biochemistry and Molecular Biology	A "Greener" Wittig Reaction Using Solid Support Synthesis via the Optimization of Procedure and Reduction of Triphenylphosphine Oxide
2:00-2:20	Avriana	Watson	Biochemistry and Molecular Biology	Design of Antibiotic Chalcone Structures via Inhibition of S. Aureus DNA gyrase
2:20-2:40	Halle	Humbaugh	Chemistry	Using a Quantitative UV-Vis Spectrophotometer Analysis to Determine Significant Differences Between the Antioxidant Capabilities of Synthetic and Natural Flavonoid Molecules
2:40-3:00	Jenna	McHardy	Chemistry	Greener Modification to the Wittig Reaction to Produce Stilbene Molecules for Anticancer Testing in Pancreatic Cells
3:00-3:20	Ghita	Diani	Chemistry	Development and Implementation of a Thiol-Functionalized ZIF-8 Lead Detection System for Cosmetics

3:20-3:40	McKenna	Blevins	Chemistry	Design of a Reusable Cu(II) MOF with Increased Adsorption Capacity for Herbicide Remediation
3:40-4:00	Tanzwikwa	Zviitwah	Biochemistry and Molecular Biology	The Detection of Trimethoprim Using Electropolymerized Molecularly Imprinted Polymers
4:00-4:20	Zion	Virgil	Chemistry	Optimizing DNA Extractions from Aged Bloodstains Deposited onto Cotton Fabric in Tropical Conditions
4:20-4:40	Peyton	Hanser	Chemistry	Electrochemical Sensor Modification for the Detection of Carbamazepine
4:40-5:00	Riley	Gwinnup	Chemistry	Utilization of Gelatin-Based Conjugates as a Drug Delivery System for the Treatment of Cutaneous Squamous Cell Carcinoma
5:00-5:20	Jazmin	Salmeron	Biochemistry and Molecular Biology	Sustained Release of Diclofenac and Ketorolac from a Gelatin Hemostatic Matrix
5:20-5:40	Kaianna	Wintter	Chemistry	An Approach to a Less Destructive Extraction of Amphetamines from a Hair Sample
5:40-6:00	Eleora	Funk	English	Magnispiralis: Playwriting on Florida and the Contemporary South
6:00-6:20	Macy	Wilcox	Biochemistry and Molecular Biology	The Development of an Electropolymerized Film for the Detection of the Mycotoxin, Citrinin
6:20-6:40	Riley	Karau	Graphic Design	Typography Speaks: An Inclusive Look Into the History and Language of Type in Graphic Design
6:40-7:00	Laura	Wallender	Elementary Education	Investigating How Fine-Motor Skills Interventions Improve Fine-Motor Development in First Grade Students
7:00-7:20	Genevieve	Chaon	Biotechnology	Why So Stressed? The Impact of Environmental Stressors on Aquatic Microorganisms

Penfield Library

1:40-2:00	Adam	Cruz	Exercise Science	The Effect of Sleep on Athletic and Cognitive Performance
2:00-2:20	Elizabeth	Griffin	Biology	Classification and Analysis of Antibiotic Properties of Unknown Species of Chromobacterium
2:20-2:40	Lily	Giliam	Biology	Investigating the Effect of Novel Visual Stimuli as a Form of Environmental Enrichment in Zoo-Housed Psittacidae

2:40-3:00	Daniel	Ramirez	Biology	Prevalence of Mosquito-Borne Parasites Around Lake Hollingsworth
3:00-3:20	Haley	Thomassy	Biology	Analysis of Outcomes of Infants with Neonatal HSV Based on Acyclovir Dosing Regimen
3:20-3:40	Kathryn	Kelly	Biology	Substrate and Light Color Preferences in Combination in Camponotus ants
3:40-4:00	Kelsey	Slone	Biology	Heavy Metal Removal from Wastewater by Wetland Vegetation
4:00-4:20	Kendall	Schafer	Biology	Skin Microbiota and Acne Vulgaris: Examining the Prevalence, Interactions, and Susceptibilities of Species among Facial Lesions
4:20-4:40	Reese	Laird	Biology	The Role of Visual and Acoustic Sensory Cues in the Shell Selection Process of the Caribbean Hermit Crab
4:40-5:00	Ashleigh	Lowery	Biology	An Expanded Assay of the Evolutionary History of Visual Genes in the Freshwater Microcrustacean, Daphnia
5:00-5:20	Caroline	Bennington	English and Spanish	El Papel del Convento en Desengaños Amorosos de María de Zayas (The role of the convent in Desengaños Amorosos by Maria de Zayas)
5:20-5:40	Abram	Dy	Exercise Science	Effects of Jocko Go on Measures of Cognitive Function
5:40-6:00	Mikayla	Smith	Business Administration	Walt Disney's Influence and Effect on the Art of Animation
6:00-6:20	Douglas	Holmes	Business Administration	The Benefits of Capitalism and Limited Government
6:20-6:40	Santiago	Zuniga	Accounting	A Qualitative Analysis of Ethics Training and Industry Internships in Shaping STEM Students' Ethical Identity
6:40-7:00	Santiago	Zuniga	Accounting	Modern Monetary Theory by an Amalgam of the Government Budget Constraint and the Dynamic Equation of Exchange

Photography Gallery

1:40-2:00	Kala	Nelson	Music: Performance	E(Mode)tional: On the Emotional Implication of Non-Diatonic Modes in the Western Classical Tradition
2:00-2:20	Karla	Van Loon	Music: Performance	Comparing Cultural Practices of Western, African, and South Indian Music

2025 Fiat Lux Presentations – By Room

2:20-2:40	Coral	Tolman	Marine Biology	Diving Into Sedimentation: How Intermittent Sedimentation Indicative of SCUBA Diving Affects Corals Growth and Physiology
2:40-3:00	Olivia	Miles	Marine Biology	How Does Total Fish Length Affect Monogenean Abundance in Freshwater Tilapia, Oreochromis spp.
3:00-3:20	Molly	Kennedy	Marine Biology	You Are What You Eat: Using Molecular Tools to Study Tapeworm Life Cycles in Young-of-the-Year Bull Sharks Carcharhinus leucas
3:20-3:40	Mara	Taylor	Marine Biology	Comparative Analysis of Parasite Communities Within Native and Invasive Snails in Central Florida
3:40-4:00	Kaliyah	Henderson	Environmental Studies	Investigating Microplastic Presence in Coral Sediments of the Mesoamerican Reef, Roatán, Honduras
4:00-4:20	Sophia	Brice	Marine Biology	Can Anemones Fight Back? Predator-Prey Analysis of the Aeolid Nudibranch Berghia stephanieae and Glass Anemone Exaiptasia diaphana
4:20-4:40	Jacob	Sells	Marine Biology	The Role of Native and Non-Native Sedge Species in Phosphorus Retention in Wastewater Treatment Wetlands
4:40-5:00	Francisco	Vargas	Biotechnology	A Semi-Quantitative Comparison of DMRT Expression Among Distinct Populations of Nematostella vectensis
5:00-5:20	Emily	Opalinski	Environmental Studies	The Effects of Nylon, Dibutyl Phthalate, and Bisphenol A on the Zooxanthellae Abundance in the Exaiptasia Anemone
5:20-5:40	Alex	Ortiz	Communication and Spanish	“DeBí TiRAR MáS FOToS”: Bad Bunny and the Voices of Modern Latin America
5:40-6:00	Jackson	Busch	Philosophy	The Metaphysical Imperativeness of Thomistic Transubstantiation: An Exploration of the Eucharist
6:00-6:20	Alex	Richardson	Computer Science	Exoplanet Exploration With Machine Learning for Kepler Survey Data
6:20-6:40	Courtney	Parrish	Spanish	Feminine Resistance, Gender Violence, and Sexuality: Ana Maria Rodas
6:40-7:00	Brenda	Alvarez	Political Science	A Collaborative Advising Tool for Florida Southern Students

Presentations

In alphabetical order by presenter's last name.

Student: Alvarez, Brenda
Major: Political Science
Faculty Mentor: Kelly McHugh
Presentation Time: 3:40-4:00
Presentation Type: Oral Presentation
Room: Classroom 2

Title: (Un)Necessary Military Spending

Abstract: Living in the country with the highest military budget—$968 billion in the year of 2024—tripling the second highest budget—China proudly wearing that title with a budget of $235 billion—leaves a lot to consider. What are we spending all this money on? Is the money being used correctly? Is that much money needed to achieve our goals? Could we spend less money without jeopardizing the country's safety? This paper hopes to find answers to those questions by analyzing current military expenditures and considering the viability of various proposals for cuts. This paper will also consider other ways the money could be used to further domestic and international U.S. interests.

Student: Alvarez, Brenda
Major: Political Science
Faculty Mentor: Christian Roberson
Presentation Time: 6:40-7:00
Presentation Type: Honors Presentation
Room: Photography Gallery

Title: A Collaborative Advising Tool for Florida Southern Students

Abstract: Academic advising is a critical yet often stressful time for both students and faculty, as the limited times and lack of preparation can impact how effective advising meetings can be. To address this problem, this project developed a web platform to enhance the performance of advising by providing essential, helpful tools for both students and advisors. This website includes a shared chat messaging and note-taking space, a four-year planning tool, a tracking system for completed and missing credits, and a file-sharing feature to store important documents. Additionally, multiple advisors can be connected to one student to allow advisors to communicate with each other. With these features, this platform aims to aid in advising to make meetings more efficient, and the registration for courses less stressful.

Student: Atkinson, Hannah
Major: Theatre Arts: Theatre Performance
Faculty Mentor: Brian Hamilton
Presentation Time: 4:20-4:40
Presentation Type: Oral Presentation
Room: Classroom 1

Title: Pleasure Through Tragedy

Abstract: Theater has long served as a means of escape, offering audiences a temporary reprieve from the complexities and challenges of everyday life. Through compelling narratives, vivid performances, and immersive environments, the stage provides a space where individuals can temporarily detach from their personal realities and enter different worlds. This escape not only provides entertainment but also offers a chance for reflection, as it allows for individuals to explore new perspectives and emotions in a controlled setting. By examining how theater functions we can better understand its significance in helping people navigate their human nature. In my thesis, Pleasure Through Tragedy, I will explore the concept of catharsis, a theory by Aristotle that suggests that experiencing tragedy through art has a profound and paradoxical effect on the human soul. Rather than simply evoking sadness, tragedy, according to Aristotle, offers a kind of emotional purification or release, allowing individuals to confront

and process their deepest emotions. This thesis aims to delve into how the cathartic experience of tragedy influences human actions and decisions. Attempting to provide insight into how art can shape not only our emotional state but also our choices and moral frameworks. By analyzing the role of tragedy in both ancient and modern contexts, this paper seeks to illuminate the complex relationship between tragedy, pleasure, and experienced emotions through the lens of Aristotle's Philosophy in comparison to other philosophers like Friedrich Nietzsche, G.W.F. Hegel, and Antonin Artaud.

Student: Bahrainwala, Zara
Major: Nursing
Faculty Mentor: Timothy Burns
Presentation Time: 4:00-4:20
Presentation Type: Honors Proposal
Room: Classroom 1

Title: How Perceived Stress Correlates with Resilience Among BSN Students at Florida Southern College

Abstract: Nursing education is characterized by significant academic and clinical challenges that can lead to heightened stress levels. Research indicates that nursing students experience substantially higher stress compared to students in other disciplines, which can negatively impact mental health, academic performance, and potential professional burnout. While existing literature highlights the prevalence of stress, there is a critical need to understand how resilience might mitigate these challenges. This cross-sectional, quantitative study aims to examine the correlation between perceived stress and resilience among Bachelor of Science in Nursing (BSN) students at Florida Southern College. Using the Connor-Davidson Resilience Scale (CD-RISC) and the Perceived Stress Scale (PSS), we will collect anonymous online survey data to investigate the relationship between stress levels and resilience across different student demographics and academic years. Statistical analyses using IBM SPSS will include Pearson's correlation coefficient, independent t-tests, and potentially multiple regression to explore the strength and nature of this relationship. By identifying potential correlations and predictors of resilience, this research seeks to provide insights that can inform targeted support strategies for nursing students' mental health and academic success. The findings will be disseminated at Florida Southern College's Fiat Lux conference and through professional nursing publications, contributing to the ongoing dialogue about student well-being in nursing education.

Student: Bennington, Caroline
Major: English and Spanish
Faculty Mentor: Melissa Garr
Presentation Time: 5:00-5:20
Presentation Type: Oral Presentation
Room: Penfield Library

Title: El Papel del Convento en Desengaños Amorosos de María de Zayas (The role of the convent in Desengaños Amorosos by Maria de Zayas)

Abstract: From the short stories in Desengaños Amorosos, Maria de Zayas offers a vision of what the convent represents in medieval Spain for women. Zayas uses the convent as a "redemptive home," a term coined by Sylvia Molloy, for women who want to escape the heterosexual matrix and patriarchal love system. For women, the "lesbian continuum" is an important term by Adrienne Rich, because it shows a spectrum of romantic and platonic love we see in the convent. Through transgressive characters in these stories, Zayas has changed the world for women and what it means to challenge heterosexual norms and the patriarchy in a society that typically views women as objects.

Student: Blevins, McKenna
Major: Chemistry
Faculty Mentor: Carmen Gauthier
Presentation Time: 3:20-3:40
Presentation Type: Oral Presentation
Room: England Gallery

Title: Design of a Reusable Cu(II) MOF with Increased Adsorption Capacity for Herbicide Remediation

Abstract: The persistence and potential toxicity of herbicides that pollute our water sources poses serious environmental and health risks. Current remediation methods are often expensive or intended for one time use. This research focuses on remediation of contaminated waters with the design of a cost-efficient and reusable metal-organic framework (MOF). This Cu(II) MOF was formed using tripod ligands of 4,4′,4″-[1,3,5-phenyl-tri(methoxy)]-tris-benzoic acid for increased pore size, to aid in adsorption. The synthesis and characterization of this MOF was explored using IR, 1H NMR, PXRD, and TGA. An additional test for adsorption capacity was conducted with UV-Vis spectrophotometry using an organic dye. The aim of this research was to synthesize a MOF with increased adsorption efficiency, that is also observed to be reusable for herbicide remediation.

Student: Brice, Sophia
Major: Marine Biology
Faculty Mentor: Jason Macrander
Presentation Time: 4:00-4:20
Presentation Type: Honors Presentation
Room: Photography Gallery

Title: Can Anemones Fight Back? Predator-Prey Analysis of the Aeolid Nudibranch Berghia stephanieae and Glass Anemone Exaiptasia diaphana

Abstract: Many venomous animals are able to modify or adapt their venom repertoire in response to environmental cues or antagonistic interactions. Berghia stephanieae is a marine nudibranch, or sea slug, that feeds exclusively on the venomous sea anemone Exaiptasia diaphana. This predator-prey pair of marine invertebrates have emerged as model organisms for laboratory studies focused on predation, however, the impacts of the nudibranch's predation on the toxin or other gene expression of the sea anemone has yet to be thoroughly explored. In addition to being venomous, E. diaphana also hosts zooxanthellae similar to reef-building corals, but unlike corals, they can survive in a bleached state without these mutualistic symbionts. This project aims to address how predation influences both bleached and unbleached anemones by analyzing and comparing the gene expression profiles of anemones exposed to nudibranch predation, faux predation, and no predation at all. Using this approach, we hope to determine whether toxins or other genes are differentially expressed following multiple predation events. Beyond analyzing gene expression of the anemones, we will also quantify changes in nematocyst production and behavioral responses. Overall, this project seeks to fill a critical knowledge gap in what is known about this unique predator-prey pair of model organisms, while also aiming to better understand how important reef-building organisms are able to defend themselves against predation as climate change continues to increase in our oceans and across the planet.

Student: Busch, Jackson
Major: Philosophy
Faculty Mentor: Brian Hamilton
Presentation Time: 5:40-6:00
Presentation Type: Honors Presentation
Room: Photography Gallery

Title: The Metaphysical Imperativeness of Thomistic Transubstantiation: An Exploration of the Eucharist

Abstract: The Eucharist, being that it serves as the Body and Blood of Jesus Christ during Holy Communion, is essential to the Christian faith broadly but more specifically to Catholicism. The main debate among Catholics is whether or not Transubstantiation is the key way to understanding the Miracle that occurs during Mass. However, the paper aims, through carefully expressed arguments, to not only show the metaphysical legitimacy, traditional legitimacy, and of course, but also the Scriptural legitimacy of Transubstantiation. By using arguments from both Aquinas and secondary sources on Aquinas, we can better understand the arguments, from a metaphysical perspective, to then better understand not only the possibility, but also the essential need for Transubstantiation to be true. Furthermore, by using arguments, circumstances, and opinions from Early Church Fathers with regards to other essential aspects of the faith, I argue that it was not uncommon to have a belief within the Church be established but still lead room for more clear understandings of said topics. Lastly, and perhaps the most compelling, I will be arguing the major distinction that pertains to the Holy Communion that Jesus, being a particular being, refers to Himself as being a particular thing (i.e. Bread and Wine) and how it is an interesting disparity once you compare to the fact that Jesus in the Gospel of John claims to be a universality (i.e. True Vine, Door to the Sheep, etc). Therefore, how do we reconcile this contradiction?

Student: Cannon, Mary
Major: Nursing
Faculty Mentor: Jennie Florkey
Presentation Time: 3:40-4:00
Presentation Type: Honors Presentation
Room: Classroom 1

Title: Mental Health and Coping in College Students by Major

Abstract: College is a time of transition and includes multivariate stressors such finances, health, love, and relationships. Today's college students are experiencing the highest rates of depression, anxiety, and suicidality of all time. This directly impacts academics with 74% of students reporting that emotional or mental difficulties hurt their academic performance at least one day in the last 4 weeks, and 55% indicating 3-6 or more days were impacted. Further, student's reporting symptoms of depression varies by major. Approximately 40% of student's majoring in nursing, 52.5% of Art students, and 31% of pre-medicine majors reported symptoms of depression during 2023. Purpose: The purpose of this study is to determine which undergraduate student majors have the highest rates of mental health concerns and which self-care measures are most effective in reducing those symptoms by major. Methods/Results: We will perform a secondary data analysis of The Healthy Minds Study which includes over 530 colleges and universities, and more then 740,000 student respondents. Data was collected beginning in 2007 and has been collected yearly since 2009. In addition to basic demographic data with student major, variables of interest for this project include any symptoms of depression or anxiety, suicidal ideation and self-injury, binge drinking, eating concerns, and various measures of self-care and resilience. After completion of the analysis, we will present the results at Fiat Lux.

Student: Chaon, Genevieve
Major: Biotechnology
Faculty Mentor: Brittany Gasper
Presentation Time: 7:00-7:20
Presentation Type: Honors Proposal
Room: England Gallery

Title: Why So Stressed? The Impact of Environmental Stressors on Aquatic Microorganisms

Abstract: Bodies of freshwater in coastal regions are at a high risk for salinization, which is the process by which saltwater contaminates freshwater. To understand the mechanisms that organisms may use to combat the increasing salinity in the environment, I collected water samples from Lake Hollingsworth and plated them onto marine agar to determine which microbes tolerated the salinity. Two chromatic organisms were isolated, a bright orange, Gram-positive rod (OB) and a vibrant pink, Gram-negative cocci (PB). These two bacteria were subjected to multiple stressors to test the limitations of each species. I made agar plates with tryptone, yeast extract, and varying concentrations of salt, ranging from 0.0% to 8.5% in half percentage intervals. OB grew well at each concentration, showing very little stress. PB was able to grow up to 8.0%, showing a rapid loss of pigment under stress. Antibiotic sensitivity testing was also performed using eight antibiotics. OB has a high susceptibility rate, only being resistant to optochin, whereas PB was resistant to each antibiotic except neomycin. Additionally, the bacteria were inoculated into LB Broth with pH ranging from 5 to 8.5, increasing in half intervals and both bacteria were able to grow at each pH. Next steps will look at furthering the known range of OB's salt tolerance and sequencing both bacteria's 16S ribosomal region for species identification. This research will help us gain a better understanding of how bacteria responds to stressors and what mechanisms permit survival in extreme environments.

Student: Diani, Ghita
Major: Chemistry
Faculty Mentor: Carmen Gauthier
Presentation Time: 3:00-3:20
Presentation Type: Oral Presentation
Room: England Gallery

Title: Development and Implementation of a Thiol-Functionalized ZIF-8 Lead Detection System for Cosmetics

Abstract: Lead contamination in cosmetics can lead to significant health issues, especially in low-income regions with little to no regulatory oversight. This research aims to develop a thiol-functionalized ZIF-8 metal-organic framework (MOF) for simple, affordable lead detection in cosmetics. ZIF-8 will be functionalized with 2,3-dimercapto-1-propanol (DMP) and with 1-methyl-1H-imidazole-2-thiol, which binds to lead ions, causing a color change from colorless to black. The functionalized MOF will be incorporated into an easy-to-use test strip for on-site detection, providing a visual indicator of lead contamination. The system will be characterized by IR spectroscopy, PXRD, and TGA. Additionally, a calibration curve and AAS will be employed for quantitative analysis, to determine the testing strip's sensitivity. The goal is to create a sensitive, selective, and user-friendly tool for consumers to test cosmetics for lead, contributing to safer consumer practices and expanding the applications of MOF-based sensing technologies.

Student: Dy, Abram **Major:** Exercise Science
Collaborator: Julianna Holsinger
Faculty Mentors: Charles Allen and Erica Marshall
Presentation Time: 5:20-5:40 **Presentation Type:** Oral Presentation
Room: Penfield Library

Title: Effects of Jocko Go on Measures of Cognitive Function

Abstract: Energy drinks, like JOCKO GO, contain a variety of supplements such as caffeine, vitamins, minerals, and nootropics, which may individually increase cognitive performance. However, the effects of these ingredients in combination are unknown. The purpose of this study was to investigate the acute effects of JOCKO GO on measures of cognitive function. METHODS: Four resistance-trained individuals (men=1, women=3, age=20±0 years) were given JOCKO GO or a placebo on two separate occasions in a counterbalanced manner. At 30 minutes post-consumption, cognitive function was assessed and included: visual reaction test, auditory reaction test, Stroop test, and digit span test. Significant differences between cognitive measures following JOCKO GO and placebo were determined using Wilcoxon Signed Rank Tests. Significance was accepted at a priori $p<0.05$. RESULTS: There were no significant differences ($p>0.05$) between placebo and JOCKO GO for the visual reaction test (placebo=289.0±9.9 ms, JOCKO GO=286.8±9.3 ms, $p=0.72$), auditory reaction test (placebo=221.0±22 ms, JOCKO GO=250.0±34.7 ms, $p=0.47$), Stroop test (placebo=125.5±64.2 ms, JOCKO GO=160.5±32 ms, $p=0.47$), or the digit span test (placebo=6±2 sequences, JOCKO GO=6±1 sequences, $p=0.18$). CONCLUSIONS: Initial findings suggest no significant cognitive performance differences for taking JOCKO GO compared to the placebo. However, a larger sample size is needed to elucidate the effects of JOCKO GO on cognitive performance.

Student: Evans, Alana **Major:** English
Faculty Mentor: Jennifer Moffitt
Presentation Time: 6:00-6:20 **Presentation Type:** Honors Proposal
Room: Classroom 2

Title: How the Internet has Evolved Audiences: An Examination of Pokémon as a Transmedia Narrative

Abstract: Transmedia storytelling is a narrative tool that rose to popularity in the late twentieth and early twenty-first centuries with the emergence of successful franchises such as Star Wars, Harry Potter, The Matrix, and the Marvel Cinematic Universe. As audiences have evolved over time, so too have the modes of entertainment that they consume. With the development of technology including the inception of the internet and social media, the capabilities of transmedia storytelling have continued to expand. This creates demand for new revolutions in the world of storytelling, as viewers now expect to be active participants in a story, not just consuming content but interacting with and even creating it. Using Pokémon as a case study of a transmedia franchise, I intend to determine how the development of the internet has changed the ways that audiences react to transmedia narratives, and what factors lead to successful storytelling among contemporary viewers.

Student: Fowler, Kylie
Major: Religion: Youth Ministry
Faculty Mentor: Brian Hamilton
Presentation Time: 4:40-5:00
Presentation Type: Oral Presentation
Room: Classroom 1

Title: Worship Wars

Abstract: Learning about the different ways of worship is important in the building of an individual and the individuals community. As people we are not just limited to one way of worship, but have access to many different ways of worship.

Student: Funk, Eleora
Major: English
Faculty Mentor: Sarah Tice
Presentation Time: 5:40-6:00
Presentation Type: Honors Proposal
Room: England Gallery

Title: Magnispiralis: Playwriting on Florida and the Contemporary South

Abstract: Magnispiralis will be a one hour play about friends navigating a future Key West with an end-of-the-world feel to it, even while the rest of the United States isn't quite there yet. This presentation will go into an outline of the play, some background on why the playwright chose to write about the themes of the play, and an overview of the playwright's next steps to show the completed play at Fiat Lux Spring 2026.

Student: Garrison, Natalie
Major: Biochemistry and Molecular Biology
Faculty Mentor: Deborah Bromfield-Lee
Presentation Time: 1:40-2:00
Presentation Type: Oral Presentation
Room: England Gallery

Title: A "Greener" Wittig Reaction Using Solid Support Synthesis via the Optimization of Procedure and Reduction of Triphenylphosphine Oxide

Abstract: The Wittig is an essential reaction on Organic chemistry, used in the manufacturing of pharmaceuticals, chemical engineering, and teaching laboratories. Despite its frequent use, it is not an optimized reaction, with low efficiency and a wasteful byproduct. This byproduct, TPPO, is often expensive to dispose of properly, leading to chemical release into the atmosphere from burning, or build up in the environment. These have been shown to have adverse effects on organisms when exposed. My work is in altering the procedure in order to increase overall efficiency, as well as attempting to recycle the wasteful byproduct for reuse, preventing its improper disposal. This is a project that utilizes "Green" Chemistry, a way of approaching chemistry with the intention to reduce waste as well as use and production of hazardous chemicals. Throughout my work I use a prior student's "Greenness" assessment to quantify and analyze the procedures used in this research.

Student: Ghaly, Abigail
Major: Business Administration
Faculty Mentor: Patrick Smith
Presentation Time: 3:00-3:20
Presentation Type: Honors Presentation
Room: Classroom 1

Title: Exploring the Intersection of Neuroscience and Criminal Responsibility

Abstract: The intersection of neuroscience and criminal responsibility has garnered increasing attention in recent years. Advances in neuroscience have provided insights into the biological underpinnings of human behavior as they pertain to criminal actions. More specifically targeted brain regions like the prefrontal cortex and the limbic system have been reliable targets for inactivity in defendants convicted of antisocially aggressive behaviors. This paper explored current literature on various neurological techniques and how the conclusions from the literature have been applied to a number of criminal court cases whose decisions were made as a result. These techniques have been used specifically to address cases in which aggressive criminal behavior has been influenced by brain activity, and these court cases include defendants who range between young adolescents and adults. Additional factors like developmental stage, levels of stress, and cognitive competence were correlated with neurological studies, and findings have been used to address court precedence that include culpability of the defendants. The ethical implications for using neurological research within the legal system is also addressed and numerous areas where the criminal justice system biases affect culpability was also discussed. The paper concludes with describing the current landscape behind the intersection of new neuroscience research that are upcoming and current criminal legal precedence.

Student: Giannone, Joseph
Major: Art History and Museum Studies
Faculty Mentor: Alex Rich
Presentation Time: 2:20-2:40
Presentation Type: Honors Presentation
Room: Auditorium

Title: Art Unfelt: Public Disconnections to Abstract Art in Museums

Abstract: This paper explores the general public's disconnect with abstract expressionist art in American museums since the early twentieth century and examines strategies for contemporary museums to make art more accessible to visitors. Opinions towards abstract artworks by the general public are often that of confusion, disinterest, disgust, and even hate. The prevalence of opinions like these has caused abstract expressionist exhibits to often be less popular and less sustainable for museums. Incorporating evidence from reviews, personal correspondence, journals, and surveys, this paper demonstrates that there is a need for improvements to the way abstract artworks are exhibited. It argues that historical and institutional factors, including changing audience expectations, and the perceived elitism of modern art discourse, have contributed to this disconnect. The study further explores how cognitive and emotional responses to non-representational art affect audience engagement and comprehension. To bridge the gap between abstract art and the general public, this paper advocates for advancements in exhibition spaces to make them more approachable to diverse audiences. It suggests improvements in the way abstract expressionist exhibits are advertised, how descriptive text in exhibits is written, how exhibit galleries are designed, and the manner in which works are displayed. Additionally, it considers the role of interactive and digital media, guided tours, and educational programming in fostering greater appreciation and engagement. By addressing these barriers, museums can cultivate a more inclusive and immersive experience that enhances public understanding and enjoyment of abstract expressionist art.

Student: Giliam, Lily
Major: Biology
Faculty Mentor: Christy Wolovich
Presentation Time: 2:20-2:40
Presentation Type: Honors Presentation
Room: Penfield Library

Title: Investigating the Effect of Novel Visual Stimuli as a Form of Environmental Enrichment in Zoo-Housed Psittacidae

Abstract: Environmental enrichment is used to manage captive animal welfare by changing and adding complexity to the environment in ways to evoke natural, species-specific behaviors. In zoos, avian species rarely receive variability in their enrichment, leading to habituation and limiting its effectiveness. Although birds have keen eyesight, visual enrichment is underutilized. Optical illusions (e.g. the Rotating Snake [RS]) and flashing lights may provide a unique sensory experience. I investigated the effect of novel visual stimuli on self-directed and social behavior of macaws (Psittacidae) at the Brevard Zoo. Eight macaws received paper enrichment (control) at the beginning of the study (Weeks 1 or 4), mid-study (Week 7) and at the end of the study (Week 10; n = 12 trials/macaw). Macaws also received two types of visual enrichment, RS motion illusion and motion light enrichment, mid-study (Weeks 5 & 6; 8 & 9; n = 8 trials/macaw). The macaws interacted with the enrichment most often and exhibited the greatest diversity of behaviors during motion illusion and light enrichment trials. Affiliative behavior within the pairs increased over the course of the study. Macaws spent nearly twice as much time allogrooming and in-contact during the final week (mean = 0.125 of sampling intervals, SD = 0.153) than at the beginning of the study (mean = 0.064 of sampling intervals, SD = 0.072). Optical illusions and dynamic light displays offer a valuable form of environmental enrichment for zoo-housed macaws and may confer similar benefits to other visually-oriented animals such as reptiles and primates.

Student: Griffin, Elizabeth
Major: Biology
Faculty Mentor: Brittany Gasper
Presentation Time: 2:00-2:20
Presentation Type: Honors Presentation
Room: Penfield Library

Title: Classification and Analysis of Antibiotic Properties of Unknown Species of Chromobacterium

Abstract: Antibiotic resistance is a growing issue. There are more resistant organisms now than ever before in history. Therefore, it is necessary to explore new antibiotics to be able to kill these bacteria. Majority of antibiotics are found in different bacterial and fungal species. These organisms are isolated and tested for antibiotic properties in the lab. A common source of antibiotic-producing organisms is in the soil. Samples are collected in hopes of finding new antibiotics from the soil bacteria. Soil samples were isolated from fertile tropical rainforest soil from the Volcanoes National Park on the big island of Hawaii. An organism from the Chromobacterium Genus was isolated. This organism was found to have antibiotic properties. This research examines physical and chemical properties of this unknown bacteria from the Chromobacterium Genus.

Student: Gwinnup, Riley
Major: Chemistry
Faculty Mentor: Shameka Shelby
Presentation Time: 4:40-5:00
Presentation Type: Oral Presentation
Room: England Gallery

Title: Utilization of Gelatin-Based Conjugates as a Drug Delivery System for the Treatment of Cutaneous Squamous Cell Carcinoma

Abstract: Cutaneous squamous cell carcinoma (cSCC) is a malignant tumor that develops in within the epidermis on the skin. When combined with drugs used to treat cSCC, gelatin may serve as a cost-effective drug delivery vehicle that may reduce the risk of recurrence following surgical removal. In order for gelatin-based conjugates to be considered a viable treatment option, they must be able to be synthesized with chemotherapy medications or other anticancer molecules, show consistent degradation over the course of two weeks, and show specificity. These requirements will be the core issues this research will address when characterizing the potential of gelatin-based conjugates as a treatment. Gelatin-based conjugates were loaded with anti-cancer agents, including 5-Fluorouracil, Doxorubicin, and Curcumin. To assess the conjugate's ability to release the anti-cancer agent, samples are subjected to incubation at 37℃ over time and released anti-cancer agents were analyzed via UV-vis spectroscopy. Conjugate release profiles demonstrated consistent release for up to 2 weeks. Cell Viability Assays will be done with both a healthy cell line and the cSCC cell line A-431. Data is expected to demonstrate the efficacy and specificity of the conjugates against cSCC.

Student: Hamlin, Shelby (Gracie)
Major: Studio Art
Faculty Mentor: William Otremsky
Presentation Time: 2:40-3:00
Presentation Type: Honors Presentation
Room: Auditorium

Title: Moving On

Abstract: I have had a complicated history consisting of rooting and uprooting my life in several different locations. Moving has become an integral part of my life, and has affected the person I am today. It has impacted my relationships, my maturity–both emotional and intellectual–and has changed the way I view the world and the people inhabiting it. What better way to express this turbulent life than with architecture–stripping the inherent stability and comfort from these domiciliary structures and turning them into unreliable conglomerations of my past; each piece as unsteady and erratic as my life has been. Using my many childhood homes as the vehicle for this concept, I have created a narrative of my life. Each canvas represents a different stage, and each has been organized both emotionally and chronologically.

Student: Hanser, Peyton
Major: Chemistry
Faculty Mentor: Micah Brown
Presentation Time: 4:20-4:40
Presentation Type: Oral Presentation
Room: England Gallery

Title: Electrochemical Sensor Modification for the Detection of Carbamazepine

Abstract: Carbamazepine (CBZ) is an anticonvulsant agent and a persistent contaminant in the environment. It is among a collection of active pharmaceutical ingredients (APIs) that are not specifically treated by wastewater reclamation facilities and whose cumulative ecological impacts are

unknown. In order to interrogate its effects, quick and accurate detection of CBZ in the field is essential, which is greatly facilitated by electrochemical sensors. The greatest challenge to electrochemical measurement is selectivity, necessitating analyte-specific modification of the electrode. In this study, a panel of four electropolymerized films (poly-2-aminophenol, poly-eugenol, poly-phenol, and poly-o-phenylenediamine) were imprinted with CBZ and deposited on glassy carbon electrodes. A rinsing procedure was optimized to remove the template CBZ molecules from each film without compromising structural integrity. Incorporating an undercoating of poly-pyrrole greatly enhanced adhesion to the electrode surface. The dual-layer sensors were then evaluated and cross-compared for their dynamic range and sensitivity towards CBZ. These performance metrics were also collected on non-imprinted electropolymerized films to assess the extent of non-specific adsorption.

Student: Henderson, Kaliyah **Major:** Environmental Studies
Faculty Mentors: Jason Macrander and Ashley Bowers-Macrander
Presentation Time: 3:40-4:00 **Presentation Type:** Honors Proposal
Room: Photography Gallery

Title: Investigating Microplastic Presence in Coral Sediments of the Mesoamerican Reef, Roatán, Honduras

Abstract: Plastic pollution has been deemed a major environmental threat to the Earth's biological systems. Due to plastic's extensive half-life, the polymers take substantial time to decompose in the environment. Instead, the particles are broken down into smaller pieces known as microplastics (MPs), which compromise the overall health of ecosystems. Coral reefs in particular are sensitive to change and anthropogenic stressors of plastic pollution. Coral reefs are an important biological system and provide ecosystem services for reef dependent organisms, communities, and the economy. The rise in plastic pollution has the potential to not only damage coral reef functionality, but also negatively impact the services corals provide. Plastic pollution has been studied in relation to coral reef health, though plastic's effect on the Mesoamerican Reef in Roatán, Honduras has been largely understudied. The goal of this study is to analyze the presence of MPs at sites around Roatán, Honduras, their potential impact on coral reef health, and compare the results to other coral reefs worldwide.

Student: Holmes, Douglas **Major:** Business Administration
Faculty Mentor: Joseph Connors
Presentation Time: 6:00-6:20 **Presentation Type:** Honors Presentation
Room: Penfield Library

Title: The Benefits of Capitalism and Limited Government

Abstract: This thesis explores the relationship between capitalism, limited government, and their impacts on economic growth, innovation, individual freedom, and social well-being. By examining capitalism's historical development globally and at a national level, the paper sets the stage for understanding how competitive markets, coupled with a limited government framework, create a society of opportunity and prosperity. The project also delves into political philosophy, highlighting key theories of limited government and exploring real-world applications. Using data and case studies, the thesis demonstrates how capitalism and limited government contribute to economic outcomes like GDP and technological innovation, as well as personal metrics such as education and life expectancy. Addressing common criticisms of capitalism and limited government, the paper also contrasts these systems with the deadly history of communism, presenting a nuanced view that aims to make these

concepts accessible and engaging without being overly political or polarizing. Ultimately, the thesis seeks to prove that capitalism and limited government not only foster economic growth but also enhance individual freedoms and social well-being, offering a compelling argument for these systems' positive impact on society.

Student: Holt, Alexander
Major: Political Science
Faculty Mentor: Kelly McHugh
Presentation Time: 4:20-4:40
Presentation Type: Oral Presentation
Room: Classroom 2

Title: The Hardest Time: Analysis of El Salvador's Prison System

Abstract: This paper analyzes the current prison system of El Salvador. The current prison system started in March 2022 after President Bukele declared a state of exception that allowed for broad government action and suspension of civil liberties. El Salvador's prison system is distinguished by its huge scale and harsh living conditions. While life inside the prison is brutal, the country has been experiencing a marked decline in crime and violence. This paper examines the recent history of El Salvador and how this system came into existence in the first place. Afterwards this paper analyzes various aspects of the prison system like the criminal justice process, life inside of prison, and national incarceration rate. There are comparisons between El Salvador and the rest of the world's prison systems. This will include comparisons between the recent crime rates in El Salvador compared to the rest of the world. There are examinations of Salvadorian public opinion and the opinions of other nations and international groups. Finally this paper comes to a conclusion about whether the prison system is a net positive or negative for El Salvador and what course of action should be taken next.

Student: Humbaugh, Halle
Major: Chemistry
Faculty Mentor: Deborah Bromfield-Lee
Presentation Time: 2:20-2:40
Presentation Type: Honors Proposal
Room: England Gallery

Title: Using a Quantitative UV-Vis Spectrophotometer Analysis to Determine Significant Differences Between the Antioxidant Capabilities of Synthetic and Natural Flavonoid Molecules

Abstract: Flavonoids are an important class of molecules that are found in all kinds of vascular plants. They have a generalized structure of C6-C3-C6 with two aromatic rings and a heterocyclic ring containing one oxygen atom. Flavonoids have been shown to exhibit anti-inflammatory, anti-cancer, anti-microbial, and antioxidant properties. Their ability to suppress free radicals is also the mechanism through which they exhibit antioxidant properties and can be quantitatively measures through the use of an DPPH• (2,2-diphenyl-1-picrylhydrazyl radical) assay. Both synthetic and natural flavonoids have been the focus of antimicrobial and antioxidant studies, and while both produce promising results for potential drug use, there has not been any studies directly comparing the antioxidant capabilities of synthetic and natural flavonoids. Whether a flavonoid is naturally or synthetically occurring will determine the means of production, since natural flavonoids will likely need to be extracted from plants and synthetic flavonoids will need to be made. This study aims to design and test a variety of similarly structured flavonoids to determine if there is an inherent benefit to developing natural or synthetic flavonoids for drug use.

Student: Hunt, Sunny
Major: Political Science
Faculty Mentor: Kelly McHugh
Presentation Time: 2:40-3:00
Presentation Type: Oral Presentation
Room: Classroom 2

Title: Fractured America: The Transformation of Republican Campaigning

Abstract: This paper aims to provide a breakdown of political polarization in the United States as well as an understanding to why polarization has increased. In recent years, studies have shown that political polarization has grown exponentially in United States politics (Bartels, 2016). Political polarization described the idea that political parties are moving away from the center and taking more extreme positions on political issues. When it comes to understanding why politicians have begun to take extreme positions, there are many different components that you have to analyze. In order to better understand this topic it was broken down into three schools of thought, these being media influence, trending politics, and stability of the country. All these factors have worked together in order to polarize these parties. To get a better understanding I looked into many different scholars' literature that were able to provide different angles and reasonings for why parties have shifted the way that they have. From this analysis I was able to find that many factors work hand in hand as well as parties having the ability to act more freely without fear of losing to many voters.

Student: James, Hanna
Major: Political Science
Faculty Mentor: Kelly McHugh
Presentation Time: 2:00-2:20
Presentation Type: Oral Presentation
Room: Classroom 2

Title: Comparing Populism in the 2016 Election

Abstract: This research examines the growth of populism, concentrating on the two forms, left-wing and right-wing, by looking at the 2016 United States Presidential Election. Populism is defined by a divide between "the people" and "the elite". There is not, however, just one form of populism, there is left and right winged. Primarily, left-wing populism focuses on emphasizing social justice, economic equality, and expanding government programs. On the contrary, right-wing populism frequently emphasizes nationalism, anti-immigrant policies, and preserving national sovereignty. These findings are from examining Sanders' progressive, socialist populism, which argues for economic changes like healthcare and education to oppose corporate dominance and wealth disparity. However, Trump's right-wing populism promotes nationalist ideals, emphasizing stricter immigration policies, more trade protection, and a bigger focus on American sovereignty. While both leaders have an anti-establishment agenda, their different ideologies have shaped their approaches to new governance and new policy. Populism, in both its left and right-wing forms, has transformed the political world. I argue that in the 2016 election, it transformed the political world by examining the role populism played in the 2020 and 2024 elections.

Student: Karau, Riley
Major: Graphic Design
Faculty Mentor: Samuel Romero
Presentation Time: 6:20-6:40
Presentation Type: Honors Proposal
Room: England Gallery

Title: Typography Speaks: An Inclusive Look Into the History and Language of Type in Graphic Design

Abstract: The art of graphic design is often subtle, seldom explicitly noticed, and this distinction only magnifies its significance. Design is everywhere. It is optical, physical, and psychological. It is all-encompassing and yet undervalued. Typography is a critical and fundamental tenet of visual communication. It serves as a channel through which the language of design is expressed. Just as colors, lines, and patterns speak, typography speaks. For the duration of this research opportunity, I aim to delve into the ever-growing and expansive history of graphic design theory through the examination of typography, specifically its impact on visual communication, and culture. I will explore the progression from the standardized letter forms of the typeset printing press to the exceedingly decorative modern fonts found on social media infographics. I will examine cultural influences on both historical and modern typography, along with the importance of a diverse design community. In order to expand on the findings of my research, I will conceptualize and design several of my own fonts from start to finish; applying what I gather in theory as a conclusive study in practice. Much like the art historical canon, the history of graphic design offers a twisted tale of prohibition and progress, ingenuity and apathy. By exploring the aforementioned topics through the lens of typography and progress, I will better understand the history of this subtle art. I will attempt to reform the ways I conceptualize and design, using typography as a guide: seeing it, feeling it, and listening to it speak.

Student: Kelly, Kathryn
Major: Biology
Faculty Mentor: Elizabeth Gennari
Presentation Time: 3:20-3:40
Presentation Type: Honors Proposal
Room: Penfield Library

Title: Substrate and Light Color Preferences in Combination in Camponotus ants

Abstract: Many studies cover how insects utilize chemoreception to navigate or find food (Zjacic & Scholz, 2022). Insects receive the odor of a food source through taste or olfaction and respond accordingly. Visual reception is well studied; the results generally indicate a preference for UV and green light (Aksoy & Camlitepe, 2018). However, ants do not perceive light or chemicals in a vacuum; they must also traverse different types of terrain in response to these cues. As such, we have developed a series of experiments to test if Camponotus ants–either C. castaneus, C. sayi, or C. pennsylvanicus–prefer walking over certain substrate types with regards to light or chemical cues. The experiments took place in a container with 4 outstretching compartments, each with differing substrates but controlled light and chemical conditions–this setup is derived slightly from the y-maze experiments of Aksoy and Camlitepe (2012). We deposited the ants in the central area of the container and monitored where they roam in 15 minute increments. After an hour, we closed off all the compartments and counted how many ants were in each area. The light conditions tested included green, red, blue, white, and darkness (no light). Meanwhile, the substrates were different textures of cork (holes, divots, crosshatch, flat and sand (control). We hypothesized the ants would avoid the red light and hole texture. Possible utility for the findings of this study include improving conditions for ant farms as well as lay the groundwork for examining other ants' substrate preferences.

Student: Kennedy, Molly
Major: Marine Biology
Faculty Mentor: Gabriel Langford
Presentation Time: 3:00-3:20
Presentation Type: Honors Presentation
Room: Photography Gallery

Title: You Are What You Eat: Using Molecular Tools to Study Tapeworm Life Cycles in Young-of-the-Year Bull Sharks Carcharhinus leucas

Abstract: Unraveling parasite life cycles is challenging under almost all conditions, even when many aspects of the host(s) and parasite can be manipulated in the laboratory. The challenge increases in marine ecosystems when studying host-parasite systems that cannot be maintained in controlled conditions. Given this limitation, it is unsurprising that the life cycles of parasites are unknown for most large marine hosts, such as elasmobranchs (sharks, skates, and rays). Recently, studies have shown the usefulness of molecular tools as an alternative method for linking different organisms that likely serve as hosts for marine parasites. A variety of parasites, including tapeworms, are known to use Bull Sharks Carcharhinus leucas as their definitive host, but we know very little about the remainder of their life cycles. This study uses molecular techniques to link intermediate hosts for Cathetocephalus sp., Paraorygmatobothrium sp., a species of the order Trypanorhyncha, and a yet to be identified adult cestode that were collected from young-of-the-year Bull Sharks in the Alafia River Estuary from Tampa Bay, Florida. It is hypothesized that these sharks are primarily preying upon small, abundant teleost fishes; we have collected larval tapeworms from these potential intermediate hosts, and common invertebrates in the area, that we will attempt to molecularly match to our adult worms from the Bull Shark.

Student: Laird, Reese
Major: Biology
Faculty Mentor: Ashley Bowers-Macrander
Presentation Time: 4:20-4:40
Presentation Type: Honors Proposal
Room: Penfield Library

Title: The Role of Visual and Acoustic Sensory Cues in the Shell Selection Process of the Caribbean Hermit Crab

Abstract: Though small, hermit crabs have been known to show complex decision making skills choosing which shell to inhabit. Throughout this process, many sensory systems are utilized including the visual, olfactory and acoustic systems. Previous studies have investigated the role of sensory systems in the shell selection process for marine hermit crabs, but little has been done on land hermit crabs. The aim of this research is to investigate the shell selection process in land hermit crabs and the potential impacts of visual and acoustic stimuli, as well as to compare the role of these sensory systems in shell choice between marine and land hermit crabs. I hypothesize that land hermit crabs will rely more heavily on acoustic cues than visual cues when compared to marine hermit crabs as their visual system is less developed. The experimental design will consist of testing shell choice in Caribbean hermit crabs (Coenobita clypeatus) under varying conditions. In each trial, test subjects will be given the choice of a black or white shell and expected to match the environment for camouflage. Shell choice will be tested in the presence and absence of light to test visual capabilities and with the addition of white noise and predator noise to test acoustic capabilities. This research has implications for sensory and behavioral ecology and could contribute to a more nuanced understanding of how land-dwelling crustaceans process sensory information to make complex decisions.

Student: Lapore-Paternostro, Lexi
Major: Pre-Law
Faculty Mentor: Bruce Anderson
Presentation Time: 3:00-3:20
Presentation Type: Honors Proposal
Room: Classroom 1

Title: A Voir Dire Situation: A Research Proposal about Jury Selection in America

Abstract: In 21st-Century America, being summoned for jury duty, or voir dire, appears to be looked upon as a punishment instead of a right. With long waits, time away from home, childcare concerns, and lost wages, many citizens dread attending and find ways to get excused. However, those accused of crimes have the right to due process, which guarantees them a trial by their peers. This is not possible if too few citizens are fulfilling their summonses, which is the route the country is headed with the recent declines in juror appearances. American court systems, established during the formation of the nation, determine jurors for criminal and civil trials using an outdated method that is no longer efficient or looked upon favorably. Therefore, a virtual voir dire system stemming from the improvised version utilized during the COVID-19 pandemic should be tested in courts across the United States to protect the right to fair trials. In order to break down the preliminary research conducted to formulate the quantitative research proposal, the drawbacks of the current system will first be discussed in the literature review. These drawbacks are that the current system is only effective if citizens are willing and that the poor summons attendance across the nation has consequences of its own. The first research question comes from this research. It questions what percentage of college students look favorably toward jury duty. This section will be followed by the current American attitudes, both decisive noncompliance and unwilling noncompliance. Lastly, a new proposed method of jury selection—an online format—will be introduced, upon which the second research question is based. The second research question is regarding whether or not college students would prefer an online jury selection format.

Student: Lewis, Tianna
Major: Dance
Faculty Mentor: Erin LaSala Phillips
Presentation Time: 6:20-6:40
Presentation Type: Oral Presentation
Room: Auditorium

Title: Beauty in Motion: Philosophical Theories and Their Reflection in Dance

Abstract: The meaning of the word “beautiful” has been one of the longest and most divisive discussions among those involved in philosophical teaching and debate. While the meaning of the word has been defined and redefined many times over, it has a long history of being used in regards to dancing. When pondering the many different meanings of “beautiful”, it leads one to think about what is really meant when it is used. This paper examines different philosophies and ideas surrounding the concept of beauty. It then uses those different concepts and compares them to different dance styles; ballet, modern, and contemporary. By following different theories on beauty while looking at the technique, aesthetics, and changes of different forms of dance, one can see how the meaning of beauty differs from style to style, and what stays the same.

Student: Lowery, Ashleigh
Major: Biology
Faculty Mentor: Christopher Brandon
Presentation Time: 4:40-5:00
Presentation Type: Honors Presentation
Room: Penfield Library

Title: An Expanded Assay of the Evolutionary History of Visual Genes in the Freshwater Microcrustacean, Daphnia

Abstract: The water flea (Daphnia) is a microscopic freshwater crustacean found within lakes and ponds around the world. Daphnia graze on algae and other floating matter within the water column and serve as an important link in freshwater food webs. Importantly, Daphnia are a freshwater keystone species, which indicates their outsized role in maintaining healthy freshwater ecosystems. Daphnia have a relatively simple visual system that is used in navigation, predator avoidance, and orientation within the water column.However, in contrast to their relatively simple eye and visual tasks, they have a surprisingly large and diverse set of genes, known as opsins, related to visual capabilities. In fact, Daphnia have one of the largest sets of visual genes known of any animal. Despite this interesting fact, little research has focused on Daphnia opsins My honors thesis research aimed to expand on previous work that examined the evolution of the opsin gene family in Daphnia. Here, I evaluated two additional species of Daphnia originating from China and geographically distinct from the European and North American species previously examined. I procured the RNA-seq data for D. similoides and D. sinensis from the publicly available NCBI database. I then ran these datasets through Trinity in order to assemble a transcriptome. Running a BLAST search on this data revealed several sequences with a large similarity to the D. magna opsin query. Alignment and comparison of the possible opsin datasets with their orthologs in D. magna allowed us to conclude that these datasets concretely were opsins. My research has shown that the large set of opsins is present within other species of Daphnia, but with notable reductions. Further examination of these species, along with other understudied species of Daphnia is needed to provide better insights into the evolutionary history of opsins in Daphnia as well as other species.

Student: McFadden, Jaclyn
Major: Marine Biology
Faculty Mentor: Jason Macrander
Presentation Time: 7:00-7:20
Presentation Type: Honors Presentation
Room: Classroom 1

Title: Claw-ver Crustaceans? Maze Learning and Memory in Leptuca pugilator

Abstract: The Atlantic sand fiddler crab, Leptuca pugilator, is abundant on the east coast of the United States, inhabiting complex intertidal zones and burrowing in the sand for protection. Throughout the day, each crab will leave their individual burrows in search of mates or food, but how these species are able to navigate complex heterogeneous environments and recall the path back is yet to be explored. This study determined the capacity for spatial learning in L. pugilator by testing the crabs in two complex mazes. Conditioned individuals learned the route of a maze over six weeks, with a burrow at the endpoint for motivation. After a one-week pause, the crabs were tested again to determine if they recalled the route. The time to complete the maze and the number of wrong turns were recorded. Naive crabs with no maze exposure were then tested in the same maze, and compared with the conditioned crabs. At the same time, the conditioned crabs were tested in a second maze with a different layout and compared to the naive crabs for the second maze. This revealed whether the ability to navigate complex heterogeneous landscapes is an attribute that can be developed through repeated exposure, which can tell us more about how these creatures navigate their environment.

Student: McHardy, Jenna
Major: Chemistry
Faculty Mentor: Deborah Bromfield-Lee
Presentation Time: 2:40-3:00
Presentation Type: Honors Proposal
Room: England Gallery

Title: Greener Modification to the Wittig Reaction to Produce Stilbene Molecules for Anticancer Testing in Pancreatic Cells

Abstract: Stilbenes, small organic molecules, are naturally occurring and have been found to possess significant anticancer and antioxidant properties. These molecules can be synthesized through an organic chemistry reaction known as the Wittig reaction, which was developed by George Wittig in 1954. Since then, many variations of the reaction have been developed that incorporate green principles, such as the incorporation of safer solvents, an increased level of energy efficiency, and the use of solid support methods with resins. The Wittig reaction can, therefore, be utilized to synthesize a library of stilbenes utilizing solid support synthesis using polystyrene resin beads loaded with triphenylphosphine. This method allows for great variations in structures compared easily and the method was studied for its ability to be a one-pot reaction. The substituent effects of the stilbenes will be evaluated for their impact against pancreatic cancer. This cell possesses DNA sequences that can form G-quadruplexes. G-quadruplexes are four-stranded nucleic acid motifs that are stabilized by hydrogen bonding between guanine bases and metal ions bound to guanine C6=O6 groups. The binding of the stilbene molecules to the DNA strand can be investigated using infrared spectroscopy instrumentation and the formation of a G-quadruplex can be monitored.

Student: Mendieta, Melanie
Major: Political Science
Faculty Mentor: Anna Caney
Presentation Time: 5:40-6:00
Presentation Type: Honors Presentation
Room: Classroom 1

Title: History in Flames and Blood: The Burning of Sacred Mayan Texts by Friar Diego de Landa and the Continuous Violence Against Indigenous People in the Americas

Abstract: This paper analyzes the 1562 destruction of Mayan codices by Franciscan friar Diego de Landa as a critical case study of colonial violence, arguing that this erasure of Indigenous knowledge was not an isolated incident or a relic of the past but a symptom of a continuous, systemic structure of oppression that persists today. The burning of these sacred texts—repositories of Maya history, astronomy, and spirituality—exemplifies Spain's strategy of cultural annihilation during the colonial era. While figures like Bartolomé de Las Casas advocated for Indigenous protection, their paternalistic frameworks ultimately reinforced colonial domination by denying Indigenous peoples political and cultural self-determination. By interrogating the logics of erasure that justified both the destruction and the so-called preservation of Indigenous cultures under colonial rule, this study traces how forced assimilation, territorial dispossession, and targeted violence have persisted as mechanisms of control into the present. These historical patterns of systemic oppression, I argue, directly inform contemporary crises, such as the epidemic of violence against Murdered and Missing Indigenous Women and Two-Spirit people (MMIWG2S). Centering the 1562 auto-da-fé within this longue durée of coloniality, the paper challenges the myth of colonial violence as a "past" injustice, insisting instead that the suppression of Indigenous sovereignty and identity remains an urgent, evolving force demanding accountability and decolonial action.

Student: Mendieta, Melanie **Major:** Political Science
Faculty Mentor: Kelly McHugh
Presentation Time: 4:00-4:20 **Presentation Type:** Oral Presentation
Room: Classroom 2

Title: La Revolución Traicionada: Nicaragua's Democratic Dreams Deferred

Abstract: The Sandinista National Liberation Front (FSLN) was born as a revolutionary movement in Nicaragua, toppling the Somoza dictatorship in 1979 with promises of democracy and social justice. However, the Sandinistas eventually became the same kind of authoritarian regime they had succeeded. This paper investigates the degree to which and reasons the FSLN strayed from its established principles, identifying the political, economic, and geopolitical drivers of the party's evolution. By examining power consolidation, foreign intervention, and internal ideological shifts this study seeks to understand the various forces leading the FSLN away from its original mandate. Though previous literature has provided valuable insight on such a phenomenon, this research will build on the obtained analysis to critique the further implications of Nicaragua´s authoritarian turn across Latin America and its role in the wider context of global politics, with a focus on the 2018 protests and further FSLN government actions against its people in recent times.

Student: Migliorato, Olivia **Major:** English
Faculty Mentors: Jennifer Moffitt and Catherine Eskin
Presentation Time: 6:20-6:40 **Presentation Type:** Honors Presentation
Room: Classroom 2

Title: Exclusive Shakespeare: The Intersection of Race and Gender in Shakespeare's "Antony and Cleopatra" and "Titus Andronicus"

Abstract: Until the past decade, the discussion of the intersectionality of race and gender in Shakespeare has been avoided by scholars. Race itself has been especially controversial, with most scholars agreeing that viewing Shakespeare's works through the lens of racism was anachronistic and inappropriate to its historical context. However, recent scholarship does view Shakespeare's works through the lenses of race and gender, providing a better understanding of the plays' dramaturgical realities. My project will look into the intersectionality of characters in two of Shakespeare's "race plays," Antony & Cleopatra (c. 1606) and Titus Andronicus (c. 1590), primarily focusing on the characters Cleopatra and Aaron. Exploring both primary materials, including performances, and scholarly texts, I will examine the long-term effects of white-washed casting, binary representation, and exclusive marketing geared towards a "cultured," older, and White audience.

Student: Miles, Olivia **Major:** Marine Biology
Faculty Mentors: Allison Durland Donahou and Gabriel Langford
Presentation Time: 2:40-3:00 **Presentation Type:** Honors Presentation
Room: Photography Gallery

Title: How Does Total Fish Length Affect Monogenean Abundance in Freshwater Tilapia, Oreochromis spp.

Abstract: Monogenean parasites are common gill ectoparasites in freshwater fish, often affecting host health, growth, and overall population dynamics. As the human population grows exponentially, the demand for freshwater fisheries and aquaculture increases, leading to higher stocking densities and

larger fish. Invasive fish populations can also alter parasite transmission, introducing foreign parasites and increasing infection rates in native species. Understanding how host size affects parasite load is critical for managing disease outbreaks in farmed and wild fish, as larger fish may serve as reservoirs for infection, impacting productivity and sustainability. To manage monogenean infestations, it is important to examine external factors influencing parasite abundance, including host length, environmental conditions, and tilapia abundance, to develop effective control strategies. This study investigates the relationship between tilapia (Oreochromis spp.) length and the abundance and diversity of monogenean parasites in their gills. Tilapia were collected from two lakes in Lakeland, Florida, and total length was recorded. Their gill arches were examined for monogeneans, which were collected, counted, and identified. Forty tilapia were sampled between November 2024 and April 2025. Preliminary results indicate that 96% of fish had monogeneans, with an average parasite load of 27 per fish. The outermost gill arch had the highest parasite load, with abundance decreasing progressively on more internal arches. Larger fish had more gill parasites on average, likely due to increased surface area and prolonged exposure. As fish size determines reproductive age, results suggest adult fish are more affected by gill monogeneans, potentially impacting survival and reproductive success. Understanding parasite impacts on tilapia is essential for managing both fish and parasite populations in aquaculture and wild ecosystems.

Student: Millik, Solana
Major: Political Science
Faculty Mentor: Kelly McHugh
Presentation Time: 1:40-2:00
Presentation Type: Oral Presentation
Room: Classroom 2

Title: Stochastic Terrorism and Fox News: The Animal on the Nation's TV

Abstract: Living in the age of social media means that we are often familiar with politicians–on both sides of the aisle–sending out a post using charged rhetoric to energize their base, but at what point does such rhetoric become too charged? Stochastic terrorism refers to repeated instances of rhetoric by political leaders and/or public figures that is hateful, vilifying, and/or dehumanizing (to a group) and inspires a supporter to carry out a hate crime or other act of violence. It is the rhetoric itself of these leaders that is stochastic terrorism. The violence inspired by such rhetoric is often random and unpredictable, making it hard to track or to prevent. This paper seeks to examine the use of stochastic terrorism in mainstream, right-wing news media, specifically Fox News. This paper will use content analysis to examine the rhetoric of various programming on Fox News to test if such rhetoric can be classified as stochastic terrorism. This analysis will give a snapshot of the current levels of political polarization in America and shed light upon how charged rhetoric can lead to violence.

Student: Mitchell, Olivia
Major: Political Science
Faculty Mentor: Kelly McHugh
Presentation Time: 3:00-3:20
Presentation Type: Oral Presentation
Room: Classroom 2

Title: Pages of Controversy: The Rise in Moralization of Politics and Book Bans

Abstract: This paper examines the question of whether there has been a developing trend towards the moralization of US politics and whether it has affected political decision-making. Political attitudes stem from what is viewed as right or wrong. Moralization is the idea that actions taken have moral significance. With this can come tensions built from opposing views. In this paper I researched the idea

of political moralization and whether or not it is a positive or negative aspect to US politics. While some scholars believe political moralization is a healthy aspect of democracy others see it as creating a further divide between parties. I also will look at whether or not it is a growing trend and the various actions taking place due to it such as book bans. The research presented later in this paper will discuss how the increased moralization has subsequently caused the increase in book bans in the US and the effects it has on US citizens.

Student: Moore, Brianna
Major: Religion
Faculty Mentor: Brian Hamilton
Presentation Time: 5:20-5:40
Presentation Type: Oral Presentation
Room: Classroom 1

Title: Faith in Crisis

Abstract: This presentation analyzes how trauma and theology intersect in an argumentative style using Shelly Rambo's two works including Spirit and Trauma and Resurrected Wounds.

Student: Murray, Abigail
Major: Theatre Arts: Technical Theatre/Design
Faculty Mentor: Natasha Lee Martin
Presentation Time: 6:00-6:20
Presentation Type: Honors Proposal
Room: Auditorium

Title: The Stories We Need To Tell: Creating a Florida Southern Fringe Festival

Abstract: In light of the abrupt changes in the John F. Kennedy Center's leadership, censorship issues in the entertainment industry have taken center stage. This proposal entails the creation of a "Florida Southern Fringe Festival," a new play festival for student-written works. The goal of this project is twofold: 1) to give students the space to develop and share stories without fear of censorship and 2) to bridge a gap in our vocational training by allowing students to be involved in the development process of original works from first draft to final bows. The festival's foundation has been created and interest in submitting for the festival has been garnered through a playwriting workshop. The remaining work is accepting play submissions, revising the work, and scheduling the official festival.

Student: Mussante, Emma
Major: Sport Business Management
Faculty Mentor: Nicholas Nugent
Presentation Time: 6:40-7:00
Presentation Type: Honors Presentation
Room: Classroom 2

Title: Fan Engagement and Experience in Minor League Baseball: A Case Study of the Lakeland Flying Tigers

Abstract: Fan engagement largely affects the success of minor league baseball teams, influencing attendance, revenue, and overall team sustainability. This study explores fan engagement and experience within minor league baseball through a case study of the single-A affiliate, the Lakeland Flying Tigers. A literature review on journal articles covering fan engagement provided a theoretical foundation, highlighting factors that affect fan retention, engagement, and loyalty. Data was collected through fan surveys, attendance trends were recorded, and interviews with key personnel involved in marketing and promotions took place to assess the Flying Tigers' current strategies. The findings revealed insights into

fan preferences, effective promotional tactics, and areas for improvement. Based on this analysis, a hypothetical plan of strategic recommendations was created to enhance the teams' fan engagement efforts in hopes of improving attendance and strengthening their connection to the Lakeland community. This research contributes to the growing field of sports business management by offering practical applications for minor league teams seeking to optimize fan engagement strategies.

Student: Nelson, Kala
Major: Music: Performance
Faculty Mentor: Benjamin Montgomery
Presentation Time: 1:40-2:00
Presentation Type: Honors Proposal
Room: Photography Gallery

Title: E(Mode)tional: On the Emotional Implication of Non-Diatonic Modes in the Western Classical Tradition

Abstract: The effect of music on our emotions is ingrained in us from an early age, but why have we been conditioned to associate particular sounds with particular emotions? This has its roots in Ancient Greece, where philosophers proposed that certain musical modes were conducive to different emotional states. Over a thousand years later, pitch collections were developed to aid the teaching of the chants in the Medieval Christian Church, thus developing the modes we know now. Over time, modes went in and out of popularity and are now common even in pop music. The aim of this project is to: 1. examine the prevalence and usage of modes (other than major and minor) from their inception in Ancient Greece and in the Ancient Church to present day; 2. To explore the influence of enculturation on the emotional effects of modes through the ages; 3. To study the links between the ethical characteristics of the eras of western philosophy with the prevalence or lack of modal music; and 4. To interview modern classical musicians in a phenomenological study on the emotional enculturation of modes in present-day collegiate America. Through this research, I hope to illuminate the connections between the cultural and/or innate qualities of modal music and their associated emotional effects through the course of ancient and modern western history.

Student: Nguyen, James
Major: Political Science
Faculty Mentor: Kelly McHugh
Presentation Time: 3:20-3:40
Presentation Type: Oral Presentation
Room: Classroom 2

Title: Instability in the Democratic Republic of the Congo

Abstract: This paper explores instability in the Democratic Republic of Congo (DRC). The DRC is home to an abundant amount of mineral resources, accounting for a significant portion of the world's supply of cobalt and copper. Approximately three-fourths of the country's annual 7.4 billion exports comes from this industry (Bak et al., 2019). Despite this, the DRC struggles to leverage its mineral wealth due to ineffective governance, widespread corruption, and foreign interference. An armed Rwanda-backed rebel group has caused the DRC massive displacement, loss of life, and regional instability. This paper explores strategies that may establish lasting stability in the region including: reducing government corruption, implementing diplomacy, and addressing the M23 rebel group.

Student: Opalinski, Emily
Major: Environmental Studies
Faculty Mentor: Jason Macrander
Presentation Time: 5:00-5:20
Presentation Type: Honors Presentation
Room: Photography Gallery

Title: The Effects of Nylon, Dibutyl Phthalate, and Bisphenol A on the Zooxanthellae Abundance in the Exaiptasia Anemone

Abstract: Every minute, the equivalent of one truckload of plastic is dumped into the ocean. This plastic pollution is becoming a growing problem for the world's oceans and the organisms that reside within. Not only do larger pieces of plastic mistakenly enter the food chain, but as the plastics break down and decompose, it turns into microplastics and harmful chemicals that negatively impact the marine environment. Although this is a global problem, the impact on marine organisms are poorly understood. The purpose of this study was to explore the effects of various plastic pollutants and microplastics found in the oceans on Exaiptasia a species of sea anemone, a part of coral reefs. This study used observation techniques to examine Exaiptasia (anemone) immersed in Dibutyl Phthalate and Bisphenol A with exposure to Nylon and seawater after fourteen days. Observation focused on the survival and zooxanthellae count of the organisms. Although consumption of Nylon microplastics did not appear to impact Zooxanthellae abundance, our results indicate Dibutyl Phthalate and Bisphenol A may negatively impact symbiont abundancies. These results indicate that the ever-growing problem of plastic pollutants may have detrimental effects on the world's coral reef ecosystems.

Student: Ortiz, Alex
Major: Communication and Spanish
Faculty Mentor: Melissa Garr
Presentation Time: 5:20-5:40
Presentation Type: Oral Presentation
Room: Photography Gallery

Title: "DeBí TiRAR MáS FOToS": Bad Bunny and the Voices of Modern Latin America

Abstract: This presentation explores Bad Bunny's recent project DeBí TiRAR MáS FOToS extends beyond the charts, and engages with themes of colonialism, resistance, and identity in Puerto Rico and Latin America. On a similar level, it explores how Latin American art has existed as both a form of expression and a platform for political resistance, echoing and amplifying the voices of local communities.

Student: Parrish, Courtney
Major: Spanish
Faculty Mentor: Melissa Garr
Presentation Time: 6:20-6:40
Presentation Type: Oral Presentation
Room: Photography Gallery

Title: Feminine Resistance, Gender Violence, and Sexuality: Ana Maria Rodas

Abstract: Ana María Rodas' Poemas de la izquierda erótica presents a poetic voice that challenges the patriarchal structures of Latin American society by exposing gender violence as both a tool of oppression and a catalyst for feminist resistance. I argue that Rodas' work demonstrates how female sexuality is inseparable from the broader struggle against systemic violence and authoritarian control. Through an analysis of her poetry and supported by scholarly sources, this study explores three key themes: feminine political resistance, gender violence, and sexuality. I examine how Rodas' poetry reclaims eroticism as a site of rebellion, challenging both literary and political norms. I investigate how

she portrays gender violence as a mechanism of patriarchal domination, revealing its psychological and physical consequences. Lastly, highlighting how Rodas' representation of female sexuality serves as an act of rebellion, subverting traditional roles imposed on women. Demonstrating that Rodas' activism not only exposes oppression but also empowers women by redefining eroticism as a force of liberation.

Student: Pelletier, Alizee
Major: Mathematics
Faculty Mentor: Susan Serrano
Presentation Time: 6:40-7:00
Presentation Type: Honors Presentation
Room: Classroom 1

Title: How External Factors Impact Student Athletes in their Performance and Prediction, Swimming Focused

Abstract: This research introduces the first part of a prediction model for swimming performance based on external factore such as stress. The final goal is to understand what factors have the most impact on the athletic performance and how to change the athletes habit to maximize the quality of their work.This will allow to change and organize practice so the performances are the best as possible in meets.

Student: Petam, Anika
Major: Nursing
Faculty Mentors: Carrie Ann Hall and Linda Comer
Presentation Time: 5:20-5:40
Presentation Type: Honors Proposal
Room: Classroom 2

Title: Patient Perception of Therapeutic Communication in Adult End-stage Renal Disease Patients

Abstract: The duties of a nurse do not only include supporting a patient's physical health but also their mental health. Therapeutic communication is an important aspect to the care of a chronically ill patient. It gives nurses the ability to connect with their patient in order to assess their emotional wellbeing. Patients with end-stage renal disease often spend a considerable time with nurses, as they frequently require hemodialysis treatments. There is limited research understanding the patient's experience with nurses in the hemodialysis clinics and whether they view their therapeutic communication methods as beneficial or detrimental. Methods: A descriptive phenomenological study exploring end stage renal disease patients' view of the therapeutic communication methods used by nurses within hemodialysis clinics. A demographic survey via Google Forms and a semi-structured interview via ZOOM will be used to collect data for this study. Participants will be recruited through signs posted in various dialysis clinics inviting individuals to participate. The sample will include 5-7 participants over the age of 50 who is diagnosed with end stage renal disease and attends a hemodialysis clinic at least once a week. The research team will use Colaizzi's method of data analysis to identify common themes after transcribing the interviews verbatim. Results will be shared with participants. Results/Dissemination Plan: The results will be disseminated through Fiat Lux, conference presentations, and professional journal publications. Conclusion: This study will explore the end stage renal disease patient's perception of therapeutic communication methods of nurses in dialysis clinics.

Student: Ramirez, Daniel
Major: Biology
Faculty Mentor: Kaitlin Gallagher
Presentation Time: 2:40-3:00
Presentation Type: Honors Proposal
Room: Penfield Library

Title: Prevalence of Mosquito-Borne Parasites Around Lake Hollingsworth

Abstract: Vector borne illnesses kill hundreds of thousands of people each year. Due to this, vector borne diseases in humans are very well studied. However, diseases that primarily or solely affect wildlife are not as well understood. This issue is of particular importance as human health is linked to the health of wildlife across the world. The goal of this study is to address this gap in knowledge by characterizing the wildlife parasites found in mosquito blood meals around Lake Hollingsworth. I expect to find Dirofilaria, Plasmodium, Haemoproteus, and Leucocytozoon parasites in mosquito blood meals, with Plasmodium being the most prevalent among the mosquitoes collected from around Lake Hollingsworth. Mosquitoes will be collected from two locations using a fan trap and identified to genus. Mosquito blood meals will undergo DNA extraction and PCR amplification to detect for the presence of Dirofilaria, Haemoproteus, Plasmodium, and Leucocytozoon parasites. Positive samples will be sent off for sequencing to identify the parasite to species. Thus far, we have collected 237 mosquitoes, 31 were Aedes, 97 were Culex, 97 were Anopheles, and two were Culiseta. Nine of the collected mosquitoes contained blood meals. Eight have been tested for the presence of haemosporidian parasites; all were negative. All samples still need to be tested for Dirofilaria infection. Mosquito collection and parasitological testing will continue through the next academic year.

Student: Restom Gaskill, Sofia
Major: Theatre Arts
Faculty Mentor: Erica Bernheim
Presentation Time: 5:40-6:00
Presentation Type: Honors Proposal
Room: Classroom 2

Title: A Modern Electra: Adapting the Tragedy of Electra and Orestes

Abstract: In this presentation, I will discuss my plans to adapt the Ancient Greek myth of Orestes and Electra into a contemporary play. I will research the different versions of the myth--from Sophocles to Aeschylus--and look at other adaptations of the story, and then structure my own version that handles modern issues, culminating in writing my own play.

Student: Richardson, Alex
Major: Computer Science
Faculty Mentor: Matthew Eicholtz
Presentation Time: 6:00-6:20
Presentation Type: Honors Presentation
Room: Photography Gallery

Title: Exoplanet Exploration With Machine Learning for Kepler Survey Data

Abstract: This study investigates the predictive capabilities of various machine learning models applied to two types of exoplanet data observed by the Kepler space telescope from 2009 to 2018. Starting with raw data sourced from the NASA Exoplanet Archive, we explore different data cleaning and preprocessing techniques to transform the raw astronomical data into a format suitable for machine learning model training and prediction. Throughout the study, we evaluate the performance of these models in predicting Kepler planet candidates, as well as examining variances in the predictions across models. We analyze the importance of various data features, model performance discrepancies, and the

differences in data types, with the aim of advancing our understanding of the recent application of artificial intelligence in astronomy. The ultimate goal of this study is to identify the most effective combination of machine learning models and data types for future exoplanet detection.

Student: Richmond, Nicole **Major:** Music: Performance
Faculty Mentor: Benjamin Montgomery
Presentation Time: 1:40-2:00 **Presentation Type:** Oral Presentation
Room: Auditorium

Title: Guided Listening of the Dies Irae and its Transcendence Through Time

Abstract: Musical tradition has its roots embedded in religion; with one song in particular standing the test of time. The classic Gregorian chant used in the Catholic Mass Propers, known as the Dies Irae, is a popular melodic idea found in countless symphonies, choral works, and even movies. Created by monks in the 13th century, this chant has undergone many iterations and is still heard today. Popular examples include The Shining, Metropolis, It's a Wonderful Life, and more! This presentation seeks to address the meaning given to music through religion, culture, and society as represented through the Dies Irae. Utilizing both visual and musical examples, this Humanities Capstone Presentation will guide viewers through the history of this popular melody that you just might recognize.

Student: Ruby, Benjamin **Major:** Communication
Faculty Mentors: Alex Ortiz and Leilani Goodmon
Presentation Time: 2:20-2:40 **Presentation Type:** Honors Proposal
Room: Classroom 1

Title: Music and the Classroom: An Evaluation of Music's Effect on College Students

Abstract: Music has long been recognized for its therapeutic benefits, particularly in alleviating stress and enhancing well-being. This study investigates the impact of choir participation on college students' mental health and academic performance at Florida Southern College. Through a series of surveys administered to students enrolled in the Concert Choir, this research examines four key questions: (1) How does previous performative music experience relate to college students' ability to enjoy choir? (2) What is the relationship between choir participation and students' overall academic success? (3) What is the relationship between choir participation and students' perceptions of the impact between that participation and their academic success? (4) What is the relationship between choir participation and the mental well-being of college students? Drawing on existing literature on music therapy and cognitive benefits, this study aims to identify patterns in students' perceptions of choir as a form of emotional and academic support. Participants will complete three surveys over the Fall 2025 semester, capturing their experiences before and after a major performance. The findings may contribute to broader discussions on the benefits of musical engagement in higher education, particularly in fostering resilience and emotional stability among students. By furthering research in this area, this study highlights the potential of choir as an accessible and enriching activity that supports student well-being.

Student: Salmeron, Jazmin
Major: Biochemistry and Molecular Biology
Faculty Mentor: Shameka Shelby
Presentation Time: 5:00-5:20
Presentation Type: Oral Presentation
Room: England Gallery

Title: Sustained Release of Diclofenac and Ketorolac from a Gelatin Hemostatic Matrix

Abstract: Nonsteroidal anti-inflammatory drugs (NSAIDs) are heavily utilized in the postoperative care regimen due to their ability to reduce inflammation. However, high-dosages and continuous use often lead to adverse effects, notably the development of ulcers. Absorbable hemostats are often utilized in surgical procedures to control bleeding in clinical settings. Combining hemostats with NSAIDS would provide an effective tool for controlling bleeding and reducing inflammation, resulting in more efficient outcomes for patients following surgical procedures. The aim of this study is to generate gelatin-based hemostatic agents covalently bonded to NSAIDs that could be used during surgical procedures. Conjugates were synthesized through the combination of gelatin type-B, 1-ethyl-3-(3-dimethylaminopropyl) carbodiimide as a cross-linking agent, and the NSAIDs, Diclofenac and Ketorolac, at 25°C for two hours to ensure complete cross-linking. The conjugates were then precipitated with ethanol to remove contaminants and collected for additional analysis. To assay the release of Diclofenac and Ketorolac from the conjugates, samples were resuspended in phosphate-buffered saline and incubated under physiological conditions over the course of two weeks with samples taken at 24, 48, 72, 96, 168, and 336 hours. Samples will be analyzed for efficacy and cell viability. This novel release system holds the potential to optimize therapeutic outcomes through decreasing the risks associated with traditional NSAID administration for wound care in postoperative patients.

Student: Sardeshmukh, Krishnaa
Major: English
Faculty Mentor: Erica Bernheim
Presentation Time: 6:00-6:20
Presentation Type: Oral Presentation
Room: Classroom 1

Title: Kavya-Rahasya: The Emergence of Contemporary Indian Poets

Abstract: The evolution of poetry is rapid and often excludes underrepresented authors. Within a country of millions, India hosts budding modern poets which are often unrecognised and not taught in classrooms across the world. It is vital to uplift such authors that represent modern poetry and my presentation will focus on introducing a selection of these poets. This is a first step into intentional inclusion and empowering the creation of more comprehensive anthologies.

Student: Saunders, Grace
Major: Nursing
Faculty Mentor: Brittany Behrens
Presentation Time: 1:40-2:00
Presentation Type: Honors Proposal
Room: Classroom 1

Title: Experiences of Psychiatric Nurses Who Have Been Assaulted by a Patient

Abstract: Violence against nurses is an increasing problem everywhere around the globe. Much of the research that exists on psychiatric nurses who have been assaulted by their patients has taken place outside of the United States, however the United States is not exempt from this issue. Certain fields of nursing such as psychiatric departments are at a higher risk of experiencing assault by a patient. Nurses who experience assault by a patient report negative mental and physical symptoms after the assault.

Methods: To better understand the experiences of psychiatric nurses, who experienced physical assault by a patient, a focused literature review was conducted. This literature review was conducted using the ESBCO search engine. The following search words were used: Assault, physical assault, workplace violence, psychiatric nurse, behavioral health, and violence assessments. Inclusion criteria were publications written in English and published within the past ten years. The abstracts of over 30 articles were reviewed based on their titles, then 16 articles were fully reviewed. Of the 16 articles, 6 were chosen to aid in the understanding of violence against nurses by a psychiatric patient.
Results/Dissemination plan: Research will be collected on the experiences of psychiatric nurses in the United States who have been physically assaulted by a patient and the results will be shared at fiat lux.
Conclusion: The research available highlights the negative impacts on nurses following assault by a patient. More research is needed to better understand the experience of nurses impacted by physical assault by a patient.

Student: Schafer, Kendall
Major: Biology
Faculty Mentor: Brittany Gasper
Presentation Time: 4:00-4:20
Presentation Type: Honors Proposal
Room: Penfield Library

Title: Skin Microbiota and Acne Vulgaris: Examining the Prevalence, Interactions, and Susceptibilities of Species among Facial Lesions

Abstract: Acne vulgaris, otherwise known simply as acne, is a common inflammatory skin disease of the pilosebaceous unit along the skin. Given its common nature and noticeable manifestations into non-inflammatory or inflammatory lesions on affected skin areas, extensive research on the factors that influence acne development has been conducted. Of these factors is research into the skin microbiome – a microenvironment characterized by a diverse abundance of bacterial and fungal species, among other microorganisms. Previous literature on the relationship between acne vulgaris and skin microbiota suggests that the species P. acnes and S. epidermidis play a key role in the manifestation of acne lesions, particularly due to variations in their relative abundances and the interactions between them. With that being said, research into the microbial composition of inflammatory and non-inflammatory acne lesions of collegiate young adults has yet to be established in the field. To address this need, the research proposed here aims to examine the prevalence of targeted species (including P. acnes and S. epidermidis) on the acne lesions of college students afflicted with acne vulgaris. This examination will be conducted through a proposed methodology of swabbing participants' facial acne lesions, culturing these samples, and identifying which species are most prevalent among the non-inflammatory and inflammatory groups. In addition to this, a discussion of the current progress and future timeline for this study is mentioned in this proposal, which addresses steps such as IRB approval, enrollment of participants, and analysis of data collected.

Student: Schultz, Logan
Major: Communication
Faculty Mentor: Alex Ortiz
Presentation Time: 2:00-2:20
Presentation Type: Honors Proposal
Room: Classroom 1

Title: Promotional Motivations in Collegians' Concert Attendance

Abstract: Many people have noticed that ticket cost for live music events has increased in recent history. While on its surface this is an economic matter, it's worthwhile to assess how music promotion

plays a part in this inflation. Along with this, there is a strong association between how live music operates in a modern setting and how it is priced. This study will be analyzing the feedback of college students (a common concert-going demographic) on what their experiences with music consumption and concert attendance have been and what has impacted their choices in these situations.

Student: Scott, Shelby
Major: Marine Biology
Faculty Mentor: Ashley Bowers-Macrander
Presentation Time: 2:40-3:00
Presentation Type: Honors Presentation
Room: Creative Lab

Title: The Effects of Predicted Climate Change Temperature and pH Conditions on Aiptasia pallida Symbiont Densities

Abstract: Human activities have impacted the natural world for millennia. Still, the effects humans have had on the Earth have been severely exacerbated since the Industrial Revolution when new technology drove an incredible rise in carbon emissions. Unfortunately, the earth's oceans, which act as carbon sinks, have struggled to match the rate at which carbon dioxide is being produced. As a result, a global crisis has been observed, termed ocean acidification. Ocean acidification has been described to affect both the biotic and abiotic components of the oceans, particularly the fragile ecosystems that are coral reefs. As these ecosystems are increasingly affected by anthropogenic climate change, a phenomenon known as coral bleaching has been observed, where corals expel their symbionts, zooxanthellae. This expulsion often leads to coral and symbiont death, and bleaching rates are used to determine the health of a reef and the conditions it may be exposed to. Here, the zooxanthellae-hosting sea anemone, Aiptasia pallida, is studied under current and predicted anthropogenic climate change conditions to understand better the factors that contribute to bleaching and the consequences this may have.

Student: Sells, Jacob
Major: Marine Biology
Faculty Mentor: Lauren Griffiths
Presentation Time: 4:20-4:40
Presentation Type: Honors Proposal
Room: Photography Gallery

Title: The Role of Native and Non-Native Sedge Species in Phosphorus Retention in Wastewater Treatment Wetlands

Abstract: Nutrient runoff is a major source of pollution in aquatic ecosystems, with wide-reaching effects that make its sources difficult to find and eliminate. Phosphorus in particular is a nutrient of concern because it is often the cause of harmful algae growth in freshwater ecosystems. A solution lies in the use of constructed wetland systems, as they are eco-friendly and cost-effective in their construction and management. While efficient, these systems can be optimized for specific environmental conditions. Certain plant species may be more effective at gathering excess phosphorus in the environment, and previous studies have shown that invasive and non-native species are often more effective than native species at retaining nutrients. This study will further look into the dynamic of native and non-native species in phosphorus uptake in constructed wastewater treatment wetlands. Our study will use mesocosms to compare the efficiency of a native and non-native sedge species (Scleria spp.) in phosphorus removal from the inflow waters to Se7en Wetlands, a wastewater treatment wetland in Lakeland, Florida, USA created on a former phosphate mine. Mesocosm-scale wetlands will be constructed to accurately determine if the native or non-native species have a larger impact on total phosphorus concentrations in the water. The study will focus on the dominant growing season (July-

November) to determine the uptake capacity of these two species. Our findings will inform future wetland management practices to allow for the greatest nutrient retention in constructed wetlands.

Student: Shannon, Emi
Major: Music: Performance
Faculty Mentor: Leilani Goodmon
Presentation Time: 2:40-3:00
Presentation Type: Honors Presentation
Room: Classroom 1

Title: The Effect of a Blue Mind Intervention on College Student Well-Being

Abstract: College students face a high risk of mental health issues (Xiao et al., 2017), making it important to research simple ways to improve well-being. Research suggests being in and around water can make you happier and leads to a semi-meditative state called "Blue Mind" (Nichols, 2014). Natural water sounds promote relaxation (Febrindirza et al., 2017) and music enhances positive feelings (Ji et al., 2021). Our previous study found that watching water scene videos with natural water sounds or water-inspired music exhibited significant improvements in well-being, though with a small sample. The current study enhances the efficacy of the Blue Mind intervention by using higher-quality audiovisuals to determine if exposure to water scene videos (with water-inspired music or natural water sounds) can improve college student well-being. Participants were randomly assigned to one of three conditions: control condition, water scenes with natural water sounds, and water scenes with water-inspired music. All groups completed five well-being baseline questionnaires. The experimental groups watched a short video with water scenes paired with natural water sounds or instrumental music before completing the same measures again. Based on research showing that being around water can improve well-being (Nichols, 2014), we hypothesized that the experimental groups will exhibit significant increases in well-being. Based on research showing that natural sounds are beneficial for cognitive functioning (Febriandirza et al., 2017), we hypothesized that those who watch the videos with natural water sounds playing will exhibit significantly greater increase in well-being compared to the other experimental condition.

Student: Silva, Sydney
Major: Graphic Design
Faculty Mentor: Samuel Romero
Presentation Time: 7:00-7:20
Presentation Type: Honors Presentation
Room: Clasroom 2

Title: The Impact of an Image

Abstract: Through the exploration of the psychological impact of photography on societal beauty standards, with a specific focus on its influence within our college campus setting. Drawing on frameworks from Susan Sontag's *On Photography*, the study examines how photographic imagery shapes perceptions of attractiveness, identity, and self-worth. Primary data was collected through a campus-wide survey designed to gauge students' responses to curated photographic content, uncovering patterns in self-perception, body image, and social comparison. The findings reveal a strong correlation between exposure to idealized imagery and internalized beauty norms, emphasizing photography's pervasive role in reinforcing narrow aesthetic ideals. By localizing the research to our student body, the project aims to bring awareness to the proximity and relevance of these issues, encouraging critical engagement with visual media. This thesis ultimately argues for a more mindful consumption and production of photography in the digital age, particularly within educational environments.

Student: Slone, Kelsey
Major: Biology
Faculty Mentor: Lauren Griffiths
Presentation Time: 3:40-4:00
Presentation Type: Honors Proposal
Room: Penfield Library

Title: Heavy Metal Removal from Wastewater by Wetland Vegetation

Abstract: An increase in population has resulted in a greater rate of pollution, and thereby a higher number of heavy metals in waterways. The presence of heavy metals in waterways has implications for human health and the environment, affecting biological processes in both systems. Through sediment and plant specific processes, wetlands have the ability to reduce heavy metals in waterways. Therefore, constructed wetlands have been introduced as a treatment mechanism for the purification of heavy metals from water. Through the collection of water samples from Se7en Wetlands in Lakeland, this study aims to analyze the efficiency of Scleria triglomerata (whip nutrush; non-native plant species) and Scleria lacustris (Wright's nutrush; native plant species) in the reduction of lead. Water samples will be analyzed for lead concentration through the use of an Atomic Absorbance Spectrophotometer, and the significance of the results will be determined by a t-test. The results of this study will help land managers make scientifically-based decisions about vegetation management in wetlands. This will work to minimize the impacts of heavy metals in the environment and ultimately human health.

Student: Smith, Mikayla
Major: Business Administration
Faculty Mentor: Cindy Hardin
Presentation Time: 5:40-6:00
Presentation Type: Honors Presentation
Room: Penfield Library

Title: Walt Disney's Influence and Effect on the Art of Animation

Abstract: Walt Disney made many advancements in several areas of business and entertainment, but it all started with his love for animation. Despite all the trials and tribulations that Walt encountered, he endured and produced many famous films with groundbreaking technology, paving the way for many new concepts in animation and influences on the culture in the United States. From Steamboat Willie, the first cartoon that had sound, to Snow White and the Seven Dwarfs, the first animated feature with full color and sound, Walt has had a considerable impact in animation becoming what we know it as today. Based on the research conducted, this thesis will discuss the successes and failures that Walt experienced all throughout his career in animation. By analyzing his career, the processes Walt used and created and the circumstances he worked in can be understood better and used to gain a clearer understanding of the field of animation. Using this analysis, a conclusion will be drawn up explaining the technology and other new components used to create Walt's animated films, as well as the business decisions made regarding them and how they have influenced the culture of the United States.

Student: Snell, Trey
Major: Humanities
Faculty Mentor: Brian Hamilton
Presentation Time: 2:00-2:20
Presentation Type: Performance
Room: Auditorium

Title: Judas I Love You

Abstract: The story of Jesus' death is one of the most well known and repeated stories, however all have one point in common. They are based around Jesus. Peter, Mary, and Judas are all individual

people, but they do not get to be. Through reading the original stories of the death of Jesus, various modern iterations of the story of Jesus' death and the apocryphal gospels of Peter, Mary, and Judas a new story is born. This short play deals with the actual characters of Peter, Mary, and Judas and allows for an exploration of these characters from the past with some more modern day christian belfies. This piece is meant to challenge preconceived notions of these characters, and allow for discussion beyond what is normally believed to be up for discussion.

Student: Taylor, Mara
Major: Marine Biology
Faculty Mentor: Kaitlin Gallagher
Presentation Time: 3:20-3:40
Presentation Type: Oral Presentation
Room: Photography Gallery

Title: Comparative Analysis of Parasite Communities Within Native and Invasive Snails in Central Florida

Abstract: Pomacea maculata is an invasive snail that has spread across the southeastern United States over the past few decades. While the snail's impacts on free-living (non parasitic) aquatic ecosystems has been well documented, little is known about how it has affected the parasite communities of native freshwater snails. We are attempting to fill this gap by characterizing the internal parasite communities of Pomacea maculata and several native snail species, including Pomacea paludosa. Thus far, we have collected 118 snails: 61 Pomacea maculata, 9 Pomacea paludosa, 34 Planorbella trivolvis, and 12 snails of indeterminate species. Of these, 22 snails (18.6%) were infected with at least one parasite species. All 22 snails were native Planorbella species. We hypothesized that the native snails would have a more abundant and diverse parasite community compared to their invasive counterparts. So, our preliminary results both support and contradict our hypothesis, since there is increased prevalence within native snails, but not within Pomacea paludosa, which had no infections . This may indicate a resistance within Pomacea against the parasites in this area. Among the members of P. trivolvis, 20 (58%) were found to be infected with one or more parasites. Approximately 5.8% were infected by nematodes and 75% of infected individuals were infected with trematodes . We will be continuing this project into the summer of 2025 to increase our host sample size. We will also be working to confirm host and parasite identities using genetic analyses.

Student: Thomassy, Haley
Major: Biology
Collaborator: Henry Foote
Faculty Mentor: Susan Banks
Presentation Time: 3:00-3:20
Presentation Type: Honors Presentation
Room: Penfield Library

Title: Analysis of Outcomes of Infants with Neonatal HSV Based on Acyclovir Dosing Regimen

Abstract: Herpes simplex virus (HSV) affects over 1,500 infants annually and may have up to 50% mortality if untreated. The antiviral medication acyclovir is the first line of therapy for treatment, but many different dosing strategies are used in practice, and the impact of dosing on outcomes is not well known. The goal of this study is to determine the overall morbidity and mortality of neonatal HSV in this infant population. We aim to describe dosing patterns of infants compared to recommended dosing guidelines. This study will compare the outcomes of infants based on dosing relative to current guidelines. We analyzed patient data from a large multicenter cohort of NICUs managed by the Pediatrix Medical Group from 1997 to 2020 treated with acyclovir. A total of 6,862 infants receiving

treatment were included in this study with only 4% mortality. Acyclovir dosing differs for infants based on postmenstrual age (PMA), the time in womb plus the time since birth. However, variability in actual dose given was observed (PMA < 30 weeks, 42% received recommended dosing; PMA 30 - < 36 weeks, 72% received recommended dosing; PMA ≥ 36 weeks, 3% of infants received recommended dosing). Infants who were a part of the lowest dosing group in each PMA group experienced more adverse effects and mortality was highest in the lower dosing groups. The data reveals that higher acyclovir dosing could allow for effective clearance of HSV and less adverse effects, leading to better treatment outcomes.

Student: Tolman, Coral **Major:** Marine Biology
Faculty Mentors: Allison Durland Donahou and Jason Macrander
Presentation Time: 2:20-2:40 **Presentation Type:** Honors Proposal
Room: Photography Gallery

Title: Diving Into Sedimentation: How Intermittent Sedimentation Indicative of SCUBA Diving Affects Corals Growth and Physiology

Abstract: In an effort to minimize human impact while still supporting the economies of tropical tourist destinations, low-impact tourism or ecotourism has gained wide popularity. However, some forms of ecotourism, including SCUBA diving, still have negative impacts on vulnerable ecosystems such as coral reefs. Diving can impact reef health, diversity, and structural complexity. One of the main mechanisms by which SCUBA divers impact coral reefs is localized sediment resuspension which can be problematic for various reasons–including inhibiting coral photosynthetic capabilities and increasing vulnerability to disease. For my honors thesis I aim to investigate how resuspended sedimentation changes coral growth and physiology through comparative imaging and gene expression analyses. I established three control and three treatment microcosms, each with six coral fragments from four different species. The treatment groups will be exposed to 15 minutes of sediment resuspension every morning across eight weeks. Photo analysis and coral clippings will be taken during week one, four, and eight. Photos will be analyzed using imageJ to determine growth over time. Clippings from coral frags will be used to perform RNAseq analysis to quantify differential gene expression profiles and determine gene regulation of physiological processes. My differential gene expression analysis will focus on metabolic and stress genes, which may correspond to coral growth physiological responses to resuspended sediments. My results will provide insight into the impacts of sedimentation at the molecular level and quantify losses in growth rates. The conclusions may also help inform coral reef management plans where SCUBA diving is prevalent.

Student: Van Loon, Karla **Major:** Music: Performance
Faculty Mentor: Benjamin Montgomery
Presentation Time: 2:00-2:20 **Presentation Type:** Honors Proposal
Room: Photography Gallery

Title: Comparing Cultural Practices of Western, African, and South Indian Music

Abstract: Analytical research regarding musical works and compositions is a subject of crucial importance to better understand the workings of this main factor of cultural identity. For the past century, scholars have developed many theories and methods to analyze the inner workings of music as we know it, however, this research has been quite limited holding only one practice of music as a standard of research. When involving musical praxis of cultures other than those developed from

European tradition we see a lack of accepted procedures when studying the compositional approaches to these genres. With many authors creating their own theories, but few of them expanding or implementing their colleagues' work, the ethnomusicological community faces a crossroads in the standardization of multicultural musical analysis. In this study, the set theory approach of James Burns in his article Rhythmic Archetypes in Instrumental Music from Africa and the Diaspora will be implemented to transcribe musical patterns of 3 culturally different pieces. This will provide the means to uncover melodic, rhythmic, and harmonic differences and similarities. The prospective findings of the study could facilitate finding techniques and practices from different cultures that could be comparable to Western music and identify those that are unique. Broadening the scope of repertoire studied will enhance our understanding of musical techniques and elevate future musical traditions.

Student: Vargas, Francisco
Major: Biotechnology
Faculty Mentor: Jason Macrander
Presentation Time: 4:40-5:00
Presentation Type: Honors Presentation
Room: Photography Gallery

Title: A Semi-Quantitative Comparison of DMRT Expression Among Distinct Populations of Nematostella vectensis

Abstract: The starlet sea anemone, Nematostella vectensis, is a burrowing anemone species endemic to the east coast of North America. As an emerging model organism, it has been the focus of a great deal of molecular research in recent years. As such, it is pertinent to understand the molecular mechanisms that underlie its reproduction and how they differ among the various populations available to researchers. This study aimed to examine whether the DMRT suite of genes, a cluster of genes that are known to be involved in the anemone's sex determination, varies between three major populations. Furthermore, we expanded our search to identify DMRT orthologs more widely across Cnidaria. To accomplish this, semi-quantitative gene expression analysis via gel electrophoresis was evaluated in four individuals from the Florida population, the South Carolina population, and the most commonly used lab population which originated from Maryland. We also conducted a BLAST search against other cnidarian predicted proteomes to construct multiple sequence alignments and construct phylogenetic trees among these candidates. These results provide some contextual evidence for variation in gene expression across populations and DRMT gene family evolution more broadly across Cnidaria.

Student: Virgil, Zion
Major: Chemistry
Faculty Mentor: Shameka Shelby
Presentation Time: 4:00-4:20
Presentation Type: Oral Presentation
Room: England Gallery

Title: Optimizing DNA Extractions from Aged Bloodstains Deposited onto Cotton Fabric in Tropical Conditions

Abstract: This research aims to optimize DNA extraction from aged bloodstains on cotton fabric, an essential step for enhancing forensic analysis in cases where evidence has deteriorated over time. 150 µL of blood will be deposited onto cotton fabric, which will then be stored at 4°C, 25°C, 31°C, 37°C, and 45°C. Samples will remain in these controlled conditions for 1 day, 7 days, 30 days, and 60 days to allow for DNA degradation over time. After establishing a baseline yield using standard extraction techniques, adjustments to the protocol, including incubation time, binding duration, and concentrations of proteinase K and buffers, will be tested to identify extraction protocols that are more optimal for

yielding DNA from deteriorated samples. PCR quantification will assess DNA recovery, with increased yield indicating successful optimization. By refining extraction methods, this study seeks to improve the reliability of forensic DNA analysis, ultimately supporting justice in post-conviction cases.

Student: Wakefield, Gracie
Major: Political Science
Faculty Mentor: Kelly McHugh
Presentation Time: 5:00-5:20
Presentation Type: Oral Presentation
Room: Creative Lab

Title: Do Protests Improve Women's Rights in Authoritarian Societies in the Middle East?

Abstract: Protests can take various forms, such as marches, rallies, demonstrations, boycotts, and petitions, all aimed at advocating for change. While citizens in the United States are guaranteed the right to protest, the situation in the Middle East is quite different, where governments restrict protests, especially concerning women's rights. The literature review will review the role of protests in advancing women's rights in the Middle East, focusing on countries like Afghanistan, Iran, Saudi Arabia, and Syria. It will also examine which protests have been effective and why some have succeeded. As well as how others have failed and how different governments have reacted to these movements. Ultimately, the essay aims to answer whether protests can improve women's rights in authoritarian societies and why this issue matters.

Student: Walker, Amy
Major: Political Science
Faculty Mentor: Kelly McHugh
Presentation Time: 4:40-5:00
Presentation Type: Oral Presentation
Room: Classroom 2

Title: Erosion of Democracy: Analyzing Donald Trump's Impact on Democratic Institutions in the United States

Abstract: Under Donald Trump's leadership, the U.S. political landscape has seen a substantial democratic backsliding. marked by threats to electoral integrity, a rise in polarization, and the breakdown of democratic norms. Concerns regarding the long-term stability of American democracy have been raised by Trump's influence, which has contributed to the progressive deterioration of democratic institutions through strategies like eroding confidence in electoral processes, eroding institutional checks and balances, and promoting populist rhetoric.

Student: Wallender, Laura
Major: Elementary Education
Faculty Mentor: Hope Holley
Presentation Time: 6:40-7:00
Presentation Type: Honors Proposal
Room: England Gallery

Title: Investigating How Fine-Motor Skills Interventions Improve Fine-Motor Development in First Grade Students

Abstract: The increasing reliance on technology has contributed to a decline in fine motor skills among young children, impacting handwriting, dexterity, and overall academic performance. This study proposes to explore the effectiveness of fine motor skill interventions in enhancing the fine motor development of first-grade students. The research will investigate whether structured fine motor

activities can improve students' hand-eye coordination, dexterity, and precision. To measure progress, the Fantastic Fingers Fine Motor Program will be used. Participants will be selected based on observed fine motor challenges, with parental consent obtained before the study begins. The study will take place in a Polk County public school, where I will conduct interventions for 30 minutes each week over a six-week period. Data collection will include pre- and post-assessments, as well as artifacts from intervention activities, which will be analyzed to identify patterns of improvement. This study aims to address whether intentional fine motor interventions can positively impact student success. The results from this research can provide educators with practical strategies for supporting fine motor skill development in young learners. Findings will contribute to the growing discussion on the importance of early childhood motor development and its role in academic readiness and future education.

Student: Wardyn, Isaac
Major: Political Science
Faculty Mentor: Kelly McHugh
Presentation Time: 2:20-2:40
Presentation Type: Oral Presentation
Room: Classroom 2

Title: How Twitter Made America Great Again

Abstract: On April 14th, 2022 Elon Musk purchased Twitter and renamed the popular social media website "X". Two years later during the 2024 election Elon Musk would become the most prominent voice and endorsement for Donald Trump and his presidential run, using X as his primary advertising platform. This paper attempts to link algorithmic changes and user trends to conclude whether or not there is a link between Elon's acquisition of Twitter and the outcome of the 2024 election. When Twitter was purchased by Musk conservative accounts saw a large increase in views and interactions whereas liberal accounts did not see much of an increase at all. What public surveys show is that a majority of social media users use social media for news, and a majority of those users trust the news they see, yet what is real news and what is propaganda and or a fake story is often hard to distinguish and hard for countries to regulate. With the data collected it is hard to conclude whether Elon had a large hand in Trump's reelection, but there are many data points across many sources stating that X and how it was used by Musk was important for Trump's campaign. For now the data can be correlated but cannot be deemed conclusive.

Student: Warnock, Trent
Major: Political Science
Faculty Mentor: Kelly McHugh
Presentation Time: 5:00-5:20
Presentation Type: Oral Presentation
Room: Classroom 2

Title: The Reign of Terrorists: Hay'at Tahrir al-Sham and its Future

Abstract: The displacement of the Assad regime in Syria and the subsequent takeover by the terrorist group Hay'at Tahrir al-Sham leaves the future of the country uncertain. Fortunately, this is not the first time that a terrorist-led government has taken power in the Middle East. In this essay, I seek to predict whether HTS will be a legitimate and effective government for Syria. To do this, I examined the history of HTS' previous government in the Idlib region of Syria, as well as three similar examples of terrorist governments in the Middle East. Using this information, I compared HTS to these groups, hoping to find enough overlap to make a clear prediction. However, all the previous examples showed some difficulty in running as an effective government. I was able to determine that HTS most closely resembled Hamas in Gaza, but seemed to have an even more moderate policy of governance. Using this information, I

predicted that HTS will likely be at least an effective government. As for their legitimacy, this will depend on whether they keep the country stable and make good on their democratic promises, a task which even the relatively effective Hamas government failed. If they can secure recognition from international organizations, such as the UN, they can officially be called legitimate. At the time of writing, this has yet to occur. It is worth nothing that the group's regime is still extremely young, and thus much could change in a few years' time.

Student: Watson, Avriana **Major:** Biochemistry and Molecular Biology
Faculty Mentor: Deborah Bromfield-Lee
Presentation Time: 2:00-2:20 **Presentation Type:** Oral Presentation
Room: England Gallery

Title: Design of Antibiotic Chalcone Structures via Inhibition of S. Aureus DNA gyrase

Abstract: Over time, an increasing need for the development of new drugs has been observed. One of these contributing reasons is the rise in antibiotic resistance. Staphylococcus aureus (S. aureus) is a bacterial species capable of developing resistance, and the number of associated infections in the U.S. general public has shown a rising trend. Chalcone, an organic molecule from plants, has shown antibiotic potential and can easily be used as a scaffold molecule to create derivatives with better activity. Limited research has been done regarding the antibiotic ability of chalcone structures through the inhibition of DNA gyrase. Therefore, this research aimed to design chalcones that have antibiotic potential against the DNA gyrase protein. Through the analysis of the binding energy to the protein and pharmacokinetic properties of these structures, data can be compared to that of market antibiotics to get a good idea of antibiotic activity.

Student: Wilcox, Macy **Major:** Biochemistry and Molecular Biology
Faculty Mentors: Micah Brown and Jason Montgomery
Presentation Time: 6:00-6:20 **Presentation Type:** Oral Presentation
Room: England Gallery

Title: The Development of an Electropolymerized Film for the Detection of the Mycotoxin, Citrinin

Abstract: Mycotoxins are responsible for damage to 25% of agricultural products worldwide, and a loss of approximately $1.5 billion dollars in the United States alone. Currently in the United States the Federal Department of Agriculture, FDA, only recognizes certain mycotoxins such as aflatoxins, ochratoxin A, etc in the federal regulations due to severe health impacts. Others such as citrinin, are overlooked and considered to be unavoidable contaminates thus regulations are more relaxed or nonexistent. Citrinin (CIT) despite its close relationship with a regulated mycotoxin, Ochratoxin A, is an overlooked example. Due to the lack of regulations installed to limit the amount of CIT allowed in agricultural products, the methods for detecting CIT specifically are lacking. These limitations of CIT detection puts the public health at risk by allowing an increased concentration into food products to be consumed. Citrinin is produced as a secondary metabolite by fungi belonging to the Aspergillus, Penicillium, and Monascus genus. This mycotoxin can be found at all stages of harvest including growth, harvest, and during storage of beans, fruits, rice, spices, dairy products, cured meats, and other agricultural products.5 The International Agency for Research on Cancer (IARC) has classified CIT as a class III contaminate, indicating it is harmful to the body after ingestion. Side effects of ingestion can lead to increased risk of cancers, allergies, kidney necrosis, alteration of kidney and liver function, and the development of Balkan endemic nephropathy which has been associated with CIT ingestion.5,7 In

China and Sub-saharan Africa alone it is suggested that 250,000 people a year die due to hepatocellular carcinoma caused by mycotoxin exposure at a rate of 1.4 μ.g/day.

Student: Williams, Hailyn
Major: Religion
Faculty Mentor: Brian Hamilton
Presentation Time: 5:00-5:20
Presentation Type: Oral Presentation
Room: Classroom 1

Title: Is Jesus Wisdom?

Abstract: My presentation will compare Jesus in the New Testament to an Old Testament figure known as Lady Wisdom. I will explain how Jesus not only fulfills her roles and being, but how he is the true Wisdom of God.

Student: Wintter, Kaianna
Major: Chemistry
Faculty Mentor: Shameka Shelby
Presentation Time: 5:20-5:40
Presentation Type: Oral Presentation
Room: England Gallery

Title: An Approach to a Less Destructive Extraction of Amphetamines from a Hair Sample

Abstract: The current methods of drug analysis using hair as forensic evidence utilize destructive techniques that can damage important proteins, which can aid in further investigation. To rectify this, a less harsh approach was determined using biochemical techniques.

Student: Yuska, Michael
Major: Psychology
Faculty Mentor: Victoria Lew
Presentation Time: 3:20-3:40
Presentation Type: Honors Proposal
Room: Classroom 1

Title: The Relationship of Emotional Intelligence and Cohort Differences on Burnout and Academic Performance in a Collegiate Setting

Abstract: Emotional intelligence (EI) is crucial for promoting long-term academic and individual success and well-being. Emotional intelligence is the ability to positively perceive and understand emotion and is essential in fostering motivation and performance. This study explores the impact of EI and cohort differences on performance and burnout, particularly in the collegiate context. By examining existing research, this review synthesizes the role of EI in secondary education, post-secondary education, and the workplace. Key findings suggest that higher emotional intelligence results in improved performance rates and a decreased likelihood of burnout. This review emphasizes the need for further research in post-secondary education to explore EI's potential for reducing burnout and enhancing student performance.

Student: Zuniga, Santiago
Major: Accounting
Collaborator: Aubrey Allen
Faculty Mentor: Griselle Centeno
Presentation Time: 6:20-6:40
Presentation Type: Oral Presentation
Room: Penfield Library

Title: A Qualitative Analysis of Ethics Training and Industry Internships in Shaping STEM Students' Ethical Identity

Abstract: In this research project funded by the National Science Foundation, we investigate the integrated roles of academia and industry as formative elements of a student's professional STEM identity. Our project aims to improve STEM students' ethical sensitivity and reasoning skills by integrating student experiences in industry internships with their academic work. The research questions driving this work are: (1) To what extent do students' pre-existing attitudes, values, and goals related to ethics and perceptions of the ethical responsibility of STEM professionals change with involvement in professional ethics training? (2) How might instruction in professional ethics, coupled with a co-curricular internship experience, enhance the development of the ethical component of a student's professional STEM identity? This presentation will discuss preliminary findings from our qualitative analysis of the efficacy of our intervention. To analyze essays written by participating students during their internships, we developed a codebook of specialized ethical terms, which we used to identify and interpret their ethical perspectives. Through this analysis, we have been identifying key themes by examining specific quotes and interpreting the author's pre-existing attitudes and values. Our ultimate goal is to compare and contrast the changes in each student's ethical understanding, both before and after receiving ethical training alongside their internship experience, in order to inform the research questions driving our work. This comparative analysis will provide key insights to inform the research questions driving our work and contribute to enhancing ethics education in STEM disciplines, providing actionable recommendations for improving professional ethics training and education.

Student: Zuniga, Santiago
Major: Accounting
Faculty Mentor: Peter Bias
Presentation Time: 6:40-7:00
Presentation Type: Honors Proposal
Room: Penfield Library

Title: Modern Monetary Theory by an Amalgam of the Government Budget Constraint and the Dynamic Equation of Exchange

Abstract: Modern economics theories seek to challenge the status quo of how we understand market functions and how economic institutions facilitate economic prosperity. One such theory is Modern Monetary Theory, which promises unlimited government spending without the consequences of inflation or heavy tax burdens. While proponents and opponents have vigorously argued the implications of such a radical theory, there have been no major quantitative studies conducted to test the viability of the theory. My research seeks to construct a dynamic economic equation that will allow us to simulate the long-run economic effects of implementing Modern Monetary Theory.

Student: Zviitwah, Tanzwikwa
Major: Biochemistry and Molecular Biology
Faculty Mentor: Micah Brown
Presentation Time: 3:40-4:00
Presentation Type: Oral Presentation
Room: England Gallery

Title: The Detection of Trimethoprim Using Electropolymerized Molecularly Imprinted Polymers

Abstract: The detection of pharmaceuticals in the environment is crucial for preserving ecosystem health along with providing insight into affected regions. The ability to detect trimethoprim (TMP) is especially important in combating antibiotic resistance. As TMP concentrations in the environment increase, more bacteria are exposed, potentially leading to increased antibiotic resistance. In this study, electropolymerized molecularly imprinted polymers (eMIPs) were employed for the selective detection of trimethoprim , a widely used antibiotic, in aqueous solutions. The process involved modifying glassy carbon electrodes with electropolymerized films, specifically poly-eugenol, poly-phenol, poly-o-phenylenediamine, and poly-2-aminophenol. The polymers were cross-compared to determine which one would form the most specific impression of TMP. The shape, size, and functional groups present in each polymer determine the affinity between the film and analyte. This affinity is essential for creating a molecular imprint within the polymer matrix, allowing the electrode surface to selectively recognize and bind TMP. Each polymer's ability to selectively bind TMP was evaluated, and all were found capable of detecting TMP at concentrations lower than the lowest observed effect concentration.

This page intentionally left blank.

Poster Presentations

In alphabetical order by presenter's last name.

Poster presentations take place on the first floor from 1:40-2:40 and 3:40-4:40.

Student: Acton, Zachary **Major:** Computer Science
Faculty Mentors: Erica Bernheim and Matt Bernthal
Presentation Time: 1:40-2:40
Location: Table 2

Title: Creative Writing to Build Brand Equity

Abstract: This poster will illustrate the use of creative writing and communication to foster brand equity. An advertising campaign will be depicted that issues a call to action of a brand's consumers. This call to action will be designed to persuade consumers to donate to a social cause associated with the brand, whether by through purchasing the brand, with the brand donating to the cause as a result of the purchase, or by consumers directly donating to the cause. The style of the ad will be based on characteristics of effective advertising, and/or elements of STICKY messages, and/or stylings of some of the advertising industry's most effective ad copy writers.

Student: Altman, Brooke **Major:** Dance
Faculty Mentor: Erin LaSala Phillips
Presentation Time: 1:40-2:40
Location: Table 6

Title: Progressive Dance Instruction through Communication: Feedback Shapes Success

Abstract: This research explores the role of a dance instructor's communication style in cultivating individual and shared growth within a classroom. Effective communication is the foundation of successful teaching and it encourages students to better understand and demonstrate movement concepts. Between classroom observations, hands-on teaching experience, and gaining information from prior research, this study explains the importance of integrating verbal, visual, and tactile feedback in a dance class. Doing so, appeases the diverse needs of students' learning styles. These three methods create a multisensory approach that can improve technical ability and nurture confidence and creativity in the classroom. By including these feedback styles, instructors can support different intelligences, such as linguistic, spatial, bodily, and interpersonal, allowing each student's unique learning style to be considered. For the methods and process of this research, college level classes were observed to explore the specific ways professors use feedback in their own classes. Another aspect of the process included conducting hands-on teaching to students of a variety of levels of training and testing the specific types of feedback mentioned and how it directly impacted the class and specific students involved. This paper's reflection suggests that the combined use of verbal, visual, and tactile communication methods in dance education is important for stimulating the growth of both individual students and the class as a whole. This process improves comprehension and precision and allows for a more inclusive and effective learning environment, allowing every student to benefit.

Student: Browne, Meredith **Major:** Biology
Faculty Mentors: Erica Bernheim and Matt Bernthal
Presentation Time: 1:40-2:40
Location: Table 5

Title: Creative Writing to Build Brand Equity

Abstract: This poster will illustrate the use of creative writing and communication to foster brand equity. An advertising campaign will be depicted that issues a call to action to a brand's consumers. This

call to action will be designed to persuade consumers to donate to a social cause associated with the brand, whether by through purchasing the brand, with the brand donating to the cause as a result of the purchase, or by consumers directly donating to the cause. The style of the ad will be based on characteristics of effective advertising, and/or elements of STICKY messages, and/or stylings of some of the advertising industry's most effective ad copy writers.

Student: Buckner, Catherine **Major:** Biology
Collaborators: Daniel Grala and Arlene Asllani
Faculty Mentor: Jason Macrander
Presentation Time: 3:40-4:40
Location: Table 2

Title: Fuel to Fight DMD: An Antioxidant Defense

Abstract: Duchenne Muscular Dystrophy (DMD) is an x-linked recessive disorder affecting 1 out of 5,000 male births. The average lifespan of a patient with DMD is only about 25. The mutation leads to dysfunction in the dystrophin protein, which is essential for keeping the integrity of the cell membrane in muscle cells. Progression of the disease leads to an unbalanced amount of reactive oxygen species (ROS). ROS can further increase damage to other cells causing cell death. Antioxidants are the best way to combat these ROS. In this study we observed effects of two compounds: Phycocyanin and Creatine Monohydrate (CM), in DMD mutant Drosophila. Phycocyanin is an antioxidant extracted from microalgae, and CM is a compound currently used for DMD therapy. While CM has shown promising evidence as a form of therapy, the mechanism is unknown. Previous research has suggested creatine monohydrate may also have antioxidant properties. Locomotion of the DMD mutant flies was tested in a climbing and flight assay. Lifespan was tracked separately. We found significance between DMD mutant control flies, and wild type control flies for the climbing assay. Some treatment groups also showed indication of improvement in the climbing assay.

Student: Cruz, Adam **Major:** Exercise Science
Faculty Mentor: Steven Radlo
Presentation Time: 1:40-2:00
Location: Table 8

Title: The Effect of Sleep on Athletic and Cognitive Performance

Abstract: This literature review will explore the importance of sleep in athletic performance, emphasizing how sleep supports recovery but also enhances overall athletic capabilities and cognitive function. Sleep is essential for regulating and maintaining the physiological functions of the body, but also for optimizing athletic performance. Adequate sleep enhances muscle recovery, energy replenishment, and increases cognitive capability and processing speed. Sleep contributes to improved performance in training and competition. Sleep deprivation can have drastic effects on the human body,impair reaction time, reduce endurance and strength, and hinders decision-making abilities. Furthermore, insufficient sleep affects hormone regulation, including the release of growth hormone and cortisol, and protein synthesis. Athletes who prioritize sleep experience better mood regulation, increased focus, and reduced risk of injury. Future research should look at duration, quality, and positive sleep habits and how individuals can optimize their sleep patterns.

Student: Fonseca, Isabel **Major:** Psychology
Collaborators: Andrea Avile and Luke Kaelin
Faculty Mentors: Patrick Smith and Elizabeth Gennari
Presentation Time: 3:40-4:40
Location: Table 3

Title: Battleship and the Brain: Pedagogical Strategies for Directional Competence

Abstract: Game-based learning involves the use of previously designed games to reinforce targeted skills. For instance, the board game Battleship has been used within different academic disciplines (e.g., Genossar et al., 2023; Kurushkin & Mikhaylenko, 2016), and elements from the game (e.g., determining "hits" from "misses") require spatial understanding of the board and potential targets. This process aligns with skills needed to learn the organization of the brain in disciplines like neuroscience (Guillot et al., 2007; Yousuf et al., 2024). The current study explored the spatial learning benefits from a modified Battleship game, as it was hypothesized that spatial learning would improve by playing the game. 38 first-year psychology majors were given an 8-item, multiple-choice pretest to assess familiarity with anatomical directions and how directions are used to identify structures within the brain. After viewing a 5-minute video about directional navigation within the brain, participants were randomly assigned to one of two groups whose board coordinates (superimposed on a medial brain image) varied from standard Battleship coordinates to directional terminology coordinates (e.g., dorsal/rostral). A "hit" was made if a correct structure on the opponent's board was guessed. After four weeks of game play, participants were given short-term and long-term posttests (two weeks later) that were similar to the pretests. Results revealed significant improvements in directional familiarity (ps < 0.01) and marginal improvements for spatially identified brain structures. These results suggest that a modified Battleship strategy serves a valuable purpose when learning the anatomy of the nervous system.

Student: Holmes, Nathan **Major:** Exercise Science
Collaborator: Nate McConnell
Faculty Mentors: Sara Terrell and Erica Marshall
Presentation Time: 1:40-2:40
Location: Table 1

Title: Vagal Nerve Stimulation Does Not Improve Heart Rate Variability in Women with Rheumatoid Arthritis

Abstract: In patients with rheumatoid arthritis (RA), vagal modulation is decreased. Transcutaneous vagus nerve stimulation (tVNS) may increase vagal modulation as demonstrated by increases in heart rate variability (HRV). Therefore, the purpose of the study was to examine the effects of tVNS on HRV in female patients 40-65 years old with RA. Three female RA patients (Age: 51±5 years, BMI: 25.1±8.7 kg/m2) volunteered to participate in the study. Patients came into the laboratory for three separate visits separated by ten days. During the first visit, anthropometric data was collected, and patients were familiarized with HRV assessment using a chest strap (PolarH10) and mobile phone application (Elite HRV). During the second visit, patients were familiarized with tVNS (Xen) and mobile phone application (Neuvana), and HRV was collected from participants' cell phone (baseline). Following ten days of tVNS, HRV was recollected (post). Ten day averages of HRV measures included root mean square of successive differences (RMSSD) and high frequency power (HF) before and after tVNS. Significant differences between measures of HRV at baseline and post tVNS were determined using Wilcoxin Signed Rank Tests. Significance was accepted a priori $p<0.05$. RESULTS: There were no significant differences ($p>0.05$) between baseline and post tVNS for HR (baseline=73bpm, post

tVNS=75bpm, p=0.11), lnRMSSD (baseline=2.97ms2, post tVNS=2.90ms2, p=0.41), or lnHF (baseline=4.2 ms2, post tVNS=3.77ms2, p=0.11). CONCLUSIONS:The preliminary findings of this study suggest that 10 days of tVNS does not improve HRV and HR measures in female adults aged 40-65 with RA. Further studies with a larger sample size would be recommended to increase validity of results.

Student: Holsinger, Julianna **Major:** Exercise Science
Faculty Mentors: Charles Allen and Erica Marshall
Presentation Time: 1:40-2:40
Location: Table 3

Title: Effects of JOCKO GO on Measures of Strength and Power

Abstract: Energy drinks, such as JOCKO GO, contain supplements such as caffeine, vitamins, and electrolytes. Companies that produce these beverages advertise outcomes of improved physical performance, specifically power and strength, post-consumption. The purpose of this study was to compare measures of power and strength following ingestion of JOCKO GO versus a placebo in resistance-trained individuals. Four resistance-trained individuals (age= 20±0 yrs; male= 1, female=3), volunteered to participate. Participants were given JOCKO GO or a placebo beverage on two separate visits, in a counterbalanced format. At 30 minutes post consumption, participants completed a warm-up, followed by a countermovement vertical jump (VJ) and isometric thigh pull (ITP) to assess power and strength, respectively. VJ assessment was conducted using an AMTI AccuPower platform. The jump height (HT), net impulse (NetImp), relative peak force (RelPF), and rate of force development (RFD) were recorded. ITP was performed using a stationary dynamometer (Preston Corporation). The significant differences between measures of power and strength following JOCKO GO and placebo and were determined using Wilcoxon Signed Rank Tests. Significance was accepted a priori $p \leq 0.05$. RESULTS: There were no significant differences ($p > 0.05$) between JOCKO GO and placebo for HT (placebo=0.3±0 m, JOCKO GO=0.3±0.1 m, p=0.07), NetImp (placebo=163.7±10 Ns, JOCKO GO=168.2±15.2 Ns, p=0.27), RelPF (placebo=23.8±2.2 N/kg, JOCKO GO=22.4±1.7 N/kg, p=0.27), RFD (placebo=4640.6±677.3 N/s, JOCKO GO=3930.2±652.7 N/s, p=0.14), or ITP (placebo=130.8±32.7 kg, JOCKO GO=136.8±33.2 kg, p=0.07). CONCLUSIONS: Preliminary results from this study suggest that JOCKO GO does not improve power and strength post-consumption. However, future studies should include a larger sample of participants. Notably, while not statistically significant, a trend suggests that ITP may be greater following consumption of JOCKO GO.

Student: Irving, Katie **Major:** Exercise Science
Faculty Mentors: Erica Bernheim and Matt Bernthal
Presentation Time: 1:40-2:40
Location: Table 6

Title: Creative Writing to Build Brand Equity

Abstract: This poster will illustrate the use of creative writing and communication to foster brand equity. An advertising campaign will be depicted that issues a call to action of a brand's consumers. This call to action will be designed to persuade consumers to donate to a social cause associated with the brand whether by through purchasing of the brand, with the brand donating to the cause as a result of the purchase, or by consumers directly donating to the cause. The style of the ad will be based on

characteristics of effective advertising, and/or elements of STICKY messages, and/or styling of some of the advertising industry's most effective ad copy writers.

Student: Karastury, Paris **Major:** Exercise Science
Faculty Mentors: Erica Bernheim and Matt Bernthal
Presentation Time: 1:40-2:40
Location: Table 7

Title: Freestyle Watches Save the Turtles Ad Campaign

Abstract: The Freestyle brand represents a youthful, energetic, and carefree lifestyle that resonates with individuals who embrace the thrill of adventure, outdoor sports, and fun. With strong ties to surf culture, the brand's image is built around the freedom of the open sea, the warmth of the sun, and the excitement of living life to the fullest. This advertisement campaign will include an executive summary, offering a comprehensive overview of the product, detailing the target market, and providing a strategic approach to advertising. The focus of the campaign is the launch of a limited edition Freestyle watch from the brand's new Turtle Line, which is inspired by the conservation efforts of endangered sea turtles. The mission of this advertisement is to create awareness for the importance of protecting sea turtles and inspire action through the purchase of the Turtle Line watch. A portion of the proceeds from each sale will be donated directly to a turtle conservatory foundation, allowing the audience to contribute to this vital cause while also acquiring a stylish and functional timepiece. The advertisement will appeal to environmentally conscious consumers and those who appreciate the blend of adventure, fashion, and philanthropy. This project aims to engage the audience emotionally, encourage them to make a purchase, and motivate them to support turtle conservation efforts by aligning the brand with a meaningful cause.

Student: Katzmann, Giselle **Major:** Biology
Faculty Mentors: Erica Bernheim and Matt Bernthal
Presentation Time: 1:40-2:40
Location: Table 5

Title: Creative Writing to Build Brand Equity

Abstract: This poster will illustrate the use of creative writing and communication to foster brand equity. An advertising campaign will be depicted that issues a call to action of a brand's consumers. This call to action will be designed to persuade consumers to donate to a social cause associated with the brand, whether by through purchasing the brand, with the brand donating to the cause as a result of the purchase, or by consumers directly donating to the cause. The style of the ad will be based on characteristics of effective advertising, and/or elements of STICKY messages, and/or stylings of some of the advertising industry's most effective ad copy writers.

Student: Kelley, Aidan **Major:** Exercise Science
Faculty Mentor: Steven Radlo
Presentation Time: 1:40-2:40
Location: Table 7

Title: The Effects of Sleep on Anerobic Sports and Training

Abstract: Athletes engaged in anaerobic sports and training require efficient recovery systems to support performance and adaptation. Sleep is essential to this recovery, influencing factors such as muscle repair, hormonal regulation, metabolism, and neuromuscular efficiency. As sleep deprivation becomes an increasingly common issue among athletes, declines in force output, recovery capacity, and injury resilience pose a significant threat to athletic success. This review explores the impact of sleep on physiological, and performance related outcomes in anaerobic training populations as well as, the importance of integrating sleep optimization strategies into anaerobic training programs. Future research should investigate individualized sleep interventions, the timing and quality of sleep, and their direct implications on long-term performance, recovery, and resilience in anaerobic athletes.

Student: Kelly, Kathryn **Major:** Biology
Faculty Mentor: Leilani Goodmon
Presentation Time: 3:40-4:40
Location: Table 1

Title: The Relationship Between Funeral Directors' Business Orientation and Customer Satisfaction

Abstract: The purpose of the study was to determine the relationship between the customer (i.e., the living person(s) arranging the funeral) and funeral directors in terms of preferences and patterns that emerge as a compromise between both parties during the funeral planning process. Previous research reveals that some funeral directors prioritize empathy and others emphasize business (Bailey, 2010; Hochschild, 1983). For example, more empathetic funeral directors may refer to the customer(s) as "the family", whereas a business oriented director may refer to the customer(s) as "the client." The type of funeral director - customer interaction may impact the customer's confidence and satisfaction regarding funeral planning. Based on research showing that funeral directors have different values - approaches (Bailey, 2010; Hochschild, 1983), we developed a survey to understand how customers respond to the values - approach by the funeral directors. We hypothesized that customers may vary in their satisfaction and confidence as a function of their preference for a certain type of funeral director (more empathetic vs. more business oriented). Customers completed surveys designed to assess their satisfaction and confidence with the funeral planning experience and their perceptions of the value-approach of their funeral director. Thus the value-approach served as the predictor variable and client satisfaction and confidence regarding the funeral experience served as the outcome measure or dependent variable. Findings of this study will be discussed in terms of ways to promote more harmonious relationships between funeral directors and their customers.

Student: Knight, Trinity **Major:** Psychology
Collaborator: Ella Porter
Faculty Mentor: Patrick Smith
Presentation Time: 3:40-4:40
Location: Table 4

Title: Clue'd in II: Time Competency Perception Using Clinically-Based Board Games

Abstract: Intuitive errors in clinical decision-making are threats to proper clinical practice (e.g., Croskerry & Norman, 2008; Vally et al., 2023; Wodzinski & Moskalewicz, 2023). These errors may parallel education in clinical psychology, where mental health symptomology takes precedent over ethical ramifications for intuitively-driven misdiagnoses (Curtis & Kelley, 2023; Rössler, 2016). Ethical awareness is critical for future clinicians (Knapp et al., 2018), but this meaningful skill requires

engagement strategies beyond traditional learning materials. (Taspinar et al., 2016). Since board games have become valuable to engage students in critical thinking, especially when game concepts center around meaningful learning experiences about the content (Willet et al., 2018). It was hypothesized that a clinical role play game (modelled after the board game Clue™) would elicit greater ethical awareness towards clinical practice. 42 first-year psychology majors completed attitudinal surveys about proper ethical practices within mental health. Participants were randomly assigned to one of two game play conditions that varied by ethical violation cards when playing the game. Participants received symptoms from previously published case studies (Barnhill, 2013) and were able to make "diagnoses" during each turn. Incorrect guesses resulted in point deductions and/or violation cards. Participants played four weeks of the game, after which they received the same assessments as the pretest after short- and long-term time intervals. Results revealed that participant awareness for ethics in clinical practice increased along numerous attitudinal measures (ps < 0.01). These data suggest a promising new strategy for introducing proper professional behaviors within the mental health field.

Student: Koyles, Karis **Major:** Exercise Science
Collaborator: Olivia Brown
Faculty Mentor: Steven Radlo
Presentation Time: 1:40-2:40
Location: Table 4

Title: The Psychological Effects of Physical Inactivity on Adolescence

Abstract: Sedentary behavior (SB) is constantly increasing among adolescents due to rising screen time, long school hours, and barriers to physical activity (PA) (1). This trend negatively impacts mental health, contributing to issues like depression and anxiety to ADHD. The purpose of this literature review is to confirm that PA can decrease the risk of mental health disorders and increase the quality of life for those currently struggling with mental illness. Research confirmed PA has substantial benefits for mental health in adolescents (1). PA mitigates symptoms, improves executive function, and enhances overall psychological well-being (4). However, excessive PA may lead to adverse outcomes like increased anxiety and burnout (19). Highlighting the need to maintain a healthy and balanced amount of PA.

Student: Kuklina, Sofiia **Major:** Biotechnology
Faculty Mentor: Jason Macrander
Presentation Time: 1:40-2:40
Location: Table 3

Title: Unlocking ShK Potential: Evolution Tinkering with a Toxin Pharmaceutical Across ~650 Million Years

Abstract: Neurotoxins play a crucial role in the self-defense and prey capture mechanisms of sea anemones. Sea anemones, with their diverse symbionts, present a unique avenue for animal-derived pharmaceuticals. Clownfish, which host sea anemones, are of particular interest due to their mutualistic relationship, offering protection against predators while receiving essential nutrients. Although they could be impacted by these ion channel targeting toxins, little is known about the co-evolution of neurotoxins and gene regulation during symbiotic interactions. ShK, originally identified in the Caribbean sea anemone Stichodactyla helianthus, inhibits voltage-gated potassium ion channels during prey interactions. Synthetic derivatives have since been developed for human pharmaceutical trials

targeting autoimmune diseases. Exploring the role clownfish hosting may play in expanding pharmaceutical applications of ShK-like neurotoxins is promising in treating autoimmune and similar diseases. To address this, we conducted clownfish association experiments and quantified gene expression changes and overall diversity of ShK-like genes. Additionally, we screen transcriptomic datasets from over a dozen different sea anemone species. Our analysis identified 216 ShK-like toxin candidates with conserved cysteine backbones. Upon closer examination of the clownfish hosting species, only one toxin candidate (She_D378_c0_g1i2) had a reduction in its expression level following symbiont association. These results provide some insight into ShK toxin analogs and prompts the necessity for further exploration to use these organisms in the development of marine derived therapeutics.

Student: Lindén, Ruben **Major:** Biotechnology
Faculty Mentor: Jason Macrander
Presentation Time: 1:40-2:40
Location: Table 4

Title: Battle of the Bark: Spruce Genes vs. Pests

Abstract: Spruce trees (Picea spp.) are economically and ecologically important conifer trees widely used in forest agriculture. However, they are increasingly threatened by pest infestations, especially from species such as the spruce bark beetle (Ips typographus) in Europe and the white pine weevil (Pissodes strobi) in North America. A plants genetics plays a crucial role in its defense against pests, where defense mechanisms and even resistance can be coded for in the plants DNA. Even though genetics is important for protection against pests, the underlying genetic mechanisms for resistance in spruce trees lack comprehensive understanding. This study investigated the conservation of genes linked with pest resistance genes across 14 conifer species, including 10 spruces, to explore their evolutionary history and potential roles in pest resistance. Six genes in Norway spruce (Picea abies) were identified as involved in pest resistance, and bioinformatic tools were used to search for these genes in the other focal species of the study. By constructing phylogenetic trees and performing selection analysis, different patterns of conservation and divergence of the resistance genes were revealed between the different spruce species. Further research on the findings of this study can contribute to development of sustainable forest management strategies such as breeding programs, conservation strategies and reduction of pesticide reliance. With an increasing impact of climate change on pest outbreaks, understanding the genetics involved in pest resistance is important for reducing economic and ecological losses.

Student: McConnell, Nate **Major:** Exercise Science
Faculty Mentors: Erica Marshall and Sara Terrell
Presentation Time: 1:40-2:40
Location: Table 1

Title: Effects of Vagal Nerve Stimulation on Blood Pressure Reactivity in Women with Rheumatoid Arthritis

Abstract: In rheumatoid arthritis (RA) patients, autonomic balance may be altered, thus exaggerating their blood pressure reactivity (BPR) which is associated with increased risk of cardiovascular issues. Transcutaneous vagal nerve stimulation (tVNS), a novel, noninvasive method of vagal nerve stimulation, may alleviate BPR in RA patients. The purpose of this study is to investigate the effects of

tVNS on BPR in adult females with RA. Three female RA patients (51 ± 4.7 years) received daily tVNS treatment in which the vagus nerve was stimulated via an earbud stimulator (Xen) paired to a mobile app (Neuvana) for 10 days. BPR was measured during a cold pressor test (CPT) on both the first and final day of treatment. A CPT is a valid and reliable assessment of sympathetic nervous system (SNS) response which triggers an increase in blood pressure. The CPT involved placing the patient's hand into ice water while measuring both systolic blood pressure (SBP) and diastolic blood pressure (DBP) at 30 and 60 seconds. The highest values were recorded. Significant differences between SBP and DBP during CPT at baseline and following tVNS was determined using Wilcoxin Signed Rank Tests. RESULTS: There were no significant differences ($p>0.05$) between baseline and post tVNS for SBP or DBP during the CPT. CONCLUSIONS: Treatment with tVNS does not appear to have a significant effect on BPR in adult female RA patients as demonstrated by the lack of significant difference between pre and post tVNS treatment SBP and DBP during CPT.

Student: Miller, Andrew **Major:** Biotechnology
Collaborators: Aiden Coffey and Eric Coburn
Faculty Mentor: Jason Macrander
Presentation Time: 3:40-4:40
Location: Table 2

Title: Deep Learning for Sharks: AI-Powered Species Identification for Conservation

Abstract: Artificial Intelligence (AI) has been applied to conservation and wildlife research in a variety of capacities to identify and monitor diverse taxa and ecosystems through non-invasive imaging techniques. Furthermore, the use of AI in combination with easy-to-use infrastructures accessible to citizen scientists has greatly expanded our understanding of both the geographic and taxonomic diversity that exists in the natural world. The goal of this project is to develop a deep learning AI system that is capable of identifying over 15 shark species that are commonly found in the Caribbean, Gulf of Mexico, and Florida coasts. Using Convolutional Neural Networks, our model aims to process and sift through pictures and provide a user with species identification and information. By analyzing distinct morphologies and skin patterns on a shark, the AI model can identify the species present with great accuracy while minimizing stress and disruption to the sharks and the ecosystem. This program is designed to be highly accessible to the public, which will allow citizen scientists to further grow and train the model. This would enable researchers to increase their data collection, benefitting conservation efforts. We anticipate that the resulting datasets produced by the AI model would assist the scientific community by detailing the location and frequency of species, which can then be used to improve species-specific conservation strategies. By creating this model, we are contributing to conservation on a broader level that also benefits biodiversity and the marine environment.

Student: Oakes-Lottridge, Adam **Major:** Psychology
Faculty Mentor: Leilani Goodmon
Presentation Time: 3:40-4:40
Location: Table 5

Title: Effects of Heated, Weighted Objects on Dental Anxiety

Abstract: Dental anxiety is a significant barrier to routine oral health care, often leading to missed dental appointments and poor oral hygiene. This study aims to investigate the effectiveness of weighted and heated objects, in reducing dental anxiety. Previous research has demonstrated the anxiety-reducing

effects of weighted blankets, therapy animals, and heat therapy in medical and psychological settings. However, these techniques have not been widely explored in the context of dental care. This study utilizes a 2x2x2 mixed-subjects factorial design, with participants randomly assigned to hold one of four objects: a weighted baby doll, a weighted and heated baby doll, a weighted stuffed animal, or a weighted and heated stuffed animal. Dental anxiety will be induced in participants by having them watch a video of a dental procedure. Anxiety levels will be measured using both subjective self-report measures and objective physiological metrics, before and after exposure to the comforting object. A control condition, in which participants hold nothing, will ensure internal validity. The study will recruit approximately 120 undergraduate students, sampled from Florida Southern College, to assess the effectiveness of these interventions within a simulated dental environment. By combining weight and heat in realistic toys, the study seeks to determine whether these variables can mitigate state anxiety associated with the dental office setting. Findings from this study have the potential to provide low-cost, non-invasive interventions to reduce dental anxiety, thereby improving patient comfort, increasing routine dental attendance, and ultimately promoting better long-term oral health.

Student: Ramirez, Daniel **Major:** Biology
Collaborators: Daniel Ramirez, Andy Vargas, Sofiia Kuklina, and Susan Banks
Faculty Mentor: Susan Banks
Presentation Time: 3:40-4:40
Location: Table 7

Title: Engineered Biosynthesis of Nematostella vectensis Toxin using a Modified pET40 Plasmid in Escherichia coli

Abstract: The starlet sea anemone, Nematostella vectensis, is a burrowing anemone species endemic to the east coast of North America. As an emerging model organism, its venom repertoire has been the subject of much research in recent years. Much of this research has involved understanding the underlying genes and gene expression of the various toxins N. vectensis produces. One such neurotoxin, NV-1, was the focus of the work we performed over the summer. NV-1 is the primary protein component of the venom present in the cnidocytes of N. vectensis. Our research specifically focused on establishing a process to produce these venoms in the lab for use in a variety of biochemical and behavioral assays. The project involved DNA cloning strategies and inducing expression of the NV-1 gene in E. coli followed by extraction and purification. To accomplish this, a modified plasmid containing the NV-1 gene was transformed into chemically competent E.coli cells. Molecular analysis was used to confirm successful transformation of the plasmid into the bacteria and protein expression was induced within the bacteria. The use of an SDS-PAGE protein gel confirmed the NV-1 expression within the bacteria. The protein was then extracted and analyzed. Toxicity assays demonstrated dose-dependent effects in grass shrimp, confirming the bioactivity of NV-1. These findings will contribute to future studies on NV-1 and enhance research methodologies for toxin characterization.

Student: Randgaard, Lily **Major:** Exercise Science
Faculty Mentor: Steven Radlo
Presentation Time: 1:40-2:40
Location: Table 2

Title: The Effects of Nutrition on Athletic Performance

Abstract: This literature review explores the impact of whole-food diets and plant-based alternatives on athletic performance. It emphasizes the role of nutrition in energy levels, recovery, endurance, and overall well-being. A whole-food diet, rich in fruits, vegetables, and lean proteins, enhances muscle function and reduces fatigue, providing essential nutrients to sustain performance. Plant-based diets are perceived to lack protein but can still provide sufficient nutrition for athletes in sources like beans, lentils, and quinoa. Functional foods, including berries and tart cherries, have antioxidant and anti-inflammatory properties that promote faster recovery and improved endurance. This review highlights the importance of balanced macronutrients like proteins and carbohydrates in supporting energy and muscle repair. However, it also identifies gaps in current research, highlighting the need for long-term studies that examine the sustained benefits of nutrition across an entire season. Future research should address individualized nutrition strategies for athletes to provide evidence-based guidance for optimizing performance. These findings outline the critical role of nutrition in optimizing athletic performance and overall health and well-being.

Student: Rudd, Wyatt **Major:** Marine Biology
Collaborators: Coral Tolman and Sofiia Kuklina
Faculty Mentor: Jason Macrander
Presentation Time: 3:40-4:40
Location: Table 6

Title: Anemone Meet and Greet: Toxin Shuffling and Metabolic Uptick in Stichodactyla helianthus after Clownfish Association

Abstract: Mutualistic symbiosis sees two distinct organisms coexisting in close proximity benefiting one another. This mutualistic interaction is especially unique in clownfish hosting anemones because they are the only venomous organisms that co-evolved to live with potential food rather than kill it. This symbiotic link has independently evolved three times within Cnidaria, indicating that given the right conditions, this beneficial association could evolve multiple times if conditions are right. For this study we used Stichodactyla helianthus, a Caribbean species known to host clownfish in aquariums, to examine toxin gene expression shifts as an atypical hosting anemone acquires a clownfish symbiont. RNA sequencing, transcriptome assembly, and gene quantification data were used from anemone tentacles prior to association, 12 hours, and 48+ hours post-association. Notably, 16 toxin candidates across 7 protein families exhibited a >2-fold or greater decrease in gene expression post-association. These protein families include AChRl, Actinoporin, NaTX, NEP 6, SCRiP, Type I KTx, and Type II KTx, some of which are prominent venom components. Conversely, 9 toxin gene candidates across 4 protein families increased expression, albeit modestly, particularly cysteine-rich neurotoxins, which may function as housekeeping genes. These findings underscore the potential influence of clownfish on toxin gene expression, particularly in establishing associations with atypical hosts, suggesting symbiont association as a vital ecological mechanism regulating toxin expression for mutualistic associations.

Student: Shannon, Emi **Major:** Music: Performance
Collaborator: Sriya Jupalli
Faculty Mentor: Leilani Goodmon
Presentation Time: 3:40-4:40
Location: Table 3

Title: The Effect of a Blue Mind Intervention on Well-Being

Abstract: College students face a high risk of mental health issues (Xiao et al., 2017), making it important to research simple ways to improve well-being. Research suggests being in and around water can make you happier and leads to a semi-meditative state called "Blue Mind" (Nichols, 2014). Natural water sounds promote relaxation (Febrindirza et al., 2017) and music enhances positive feelings (Ji et al., 2021). Our previous study found that watching water scene videos with natural water sounds or water-inspired music exhibited significant improvements in well-being, though with a small sample. The current study enhances the efficacy of the Blue Mind intervention by using higher-quality audiovisuals to determine if exposure to water scene videos (with water-inspired music or natural water sounds) can improve college student well-being. Participants were randomly assigned to one of three conditions: control condition, water scenes with natural water sounds, and water scenes with water-inspired music. All groups completed five well-being baseline questionnaires. The experimental groups watched a short video with water scenes paired with natural water sounds or instrumental music before completing the same measures again. Based on research showing that being around water can improve well-being (Nichols, 2014), we hypothesized that the experimental groups will exhibit significant increases in well-being. Based on research showing that natural sounds are beneficial for cognitive functioning (Febriandirza et al., 2017), we hypothesized that those who watch the videos with natural water sounds playing will exhibit significantly greater increase in well-being compared to the other experimental condition.

Student: Tolman, Coral **Major:** Marine Biology
Faculty Mentor: Jason Macrander
Presentation Time: 3:40-4:40
Location: Table 4

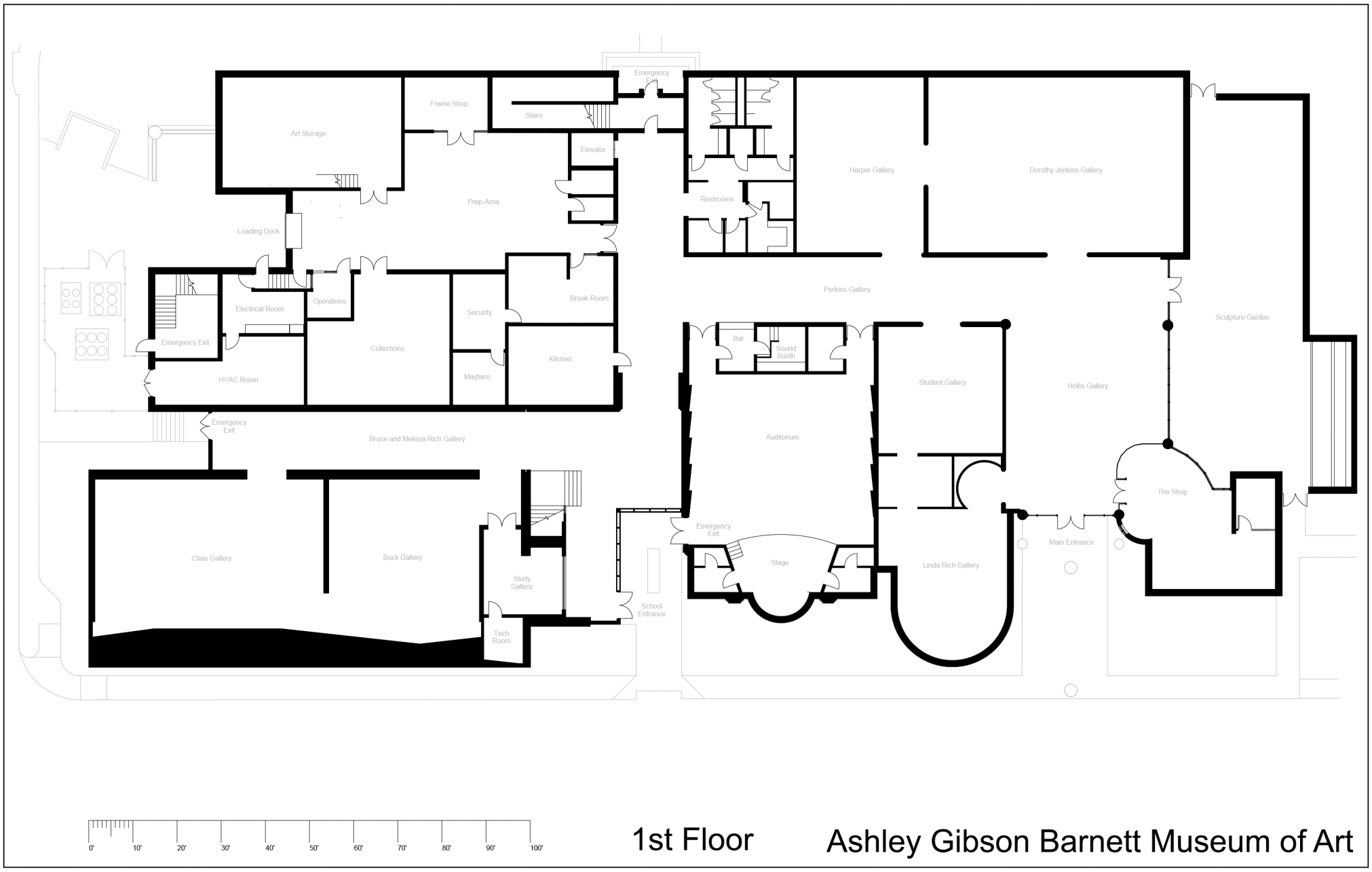
Title: Nocturnal Feeding Influences Venom Expression and Metabolism in Coral Propagules

Abstract: Coral reefs have been in serious decline due to a variety of factors including bleaching, disease, and coastal erosion. Restoration efforts around the world have been fervently searching for solutions; including coral propagation, rearing, transplantation, and outplanting. However, outcropping success is relatively low and usually it is not clear why out-planted corals have failed. Nevertheless, feeding corals (with Artemia) have been shown to increase growth rates of propagules prior to outplanting. Although these additional nutrients are acquired through predation, little is known about the venom expression that coincides with feeding in corals. Our experiment aims to evaluate venom expression as a proxy for coral propagule growth through two different feeding regimes: nocturnal feeding and 'starved'. To test this we set up identical systems with 5 species of corals across both treatments. Throughout an 8-week feeding experiment we took images of each coral propagule to measure growth and took samples for comparative RNA Sequencing. Comparative analyses of the growth patterns in these corals did not find a significant difference between feeding and starved treatments, however, this may be due to small sample sizes as the weeks progressed. Additionally, we found several genes differentially expressed between starvation and feeding regimes of the corals, with some venom candidates upregulated among the "fed" conditions when compared to the "starved" treatment. Overall, these results are the first insight into molecular responses of coral propagules across two distinct feeding regimes, providing us a starting point towards potentially improving long-term coral propagation and outplanting efforts.

Student: Walden, Alexus **Major:** Exercise Science
Faculty Mentor: Steven Radlo
Presentation Time: 1:40-2:40
Location: Table 8

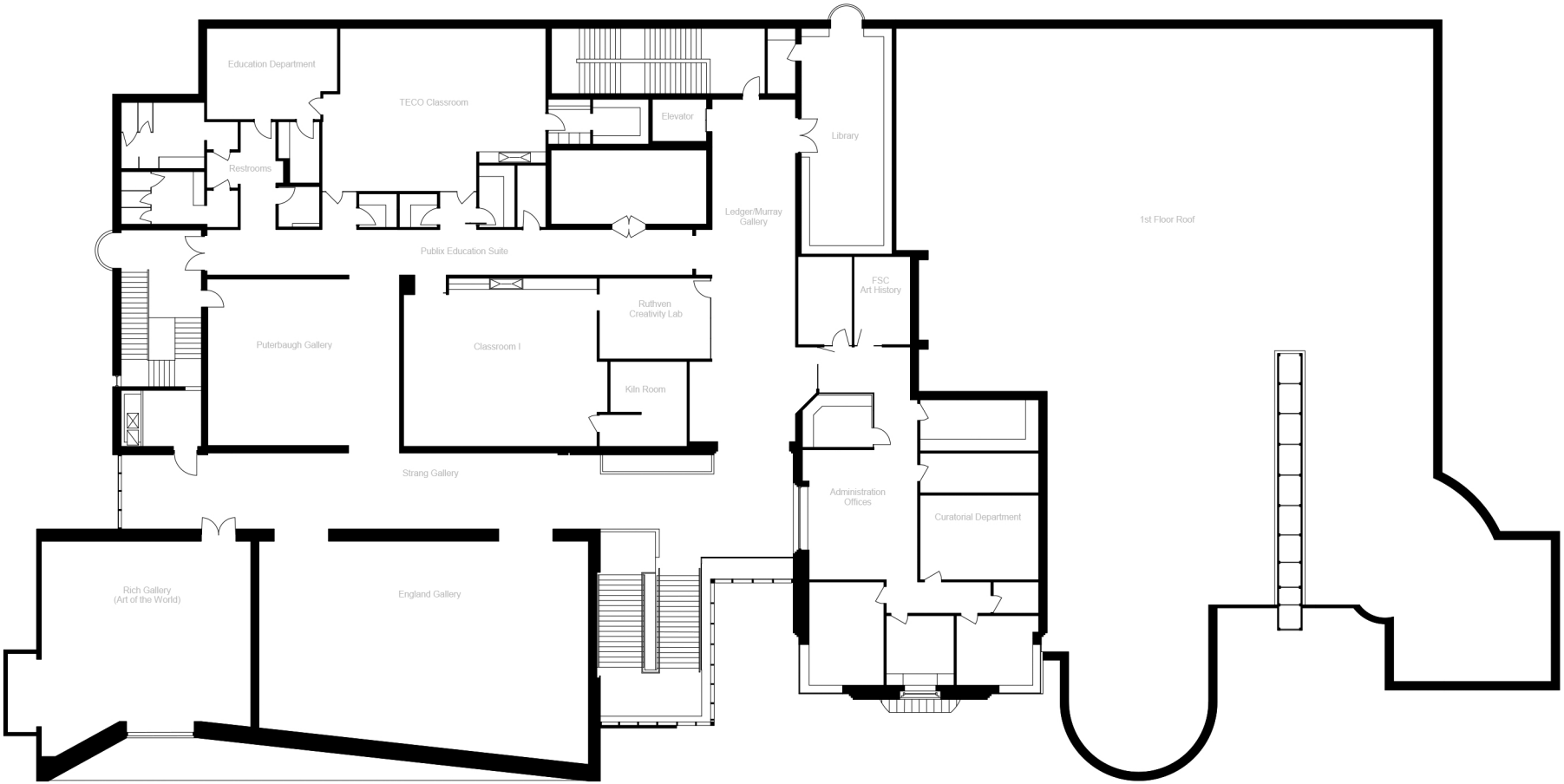
Title: The Impact of Social Support on Student-Athletes

Abstract: The primary sources of social support for the majority of student-athletes are their teammates, coaches, and athletic trainers. Student-athlete's relationships with people in one of these social support positions has the impact to influence their entire athletic experience, with a positive relationship leading to a positive experience and a negative relationship leading to a negative one. These interactions have been shown to affect athletes' overall wellness and mental health, which can have an impact on their athletic performance. However, the use of social support in regard to injured athletes' rehabilitation and recovery has been often overlooked. The purpose of this literature review is to understand the impact of social support on student athletes. Future research should look into identifying the benefits of adding social support elements to various age groups within injury recovery programs.



1st Floor

Ashley Gibson Barnett Museum of Art



2nd Floor

Ashley Gibson Barnett Museum of Art

This page intentionally left blank.


BE CURIOUS.
FLORIDA SOUTHERN COLLEGE®