

2023 Biology Department Senior Project Symposium

Allegheny College

Student Presentations:

Monday & Tuesday, April 24-25, 1:10-4:30 p.m.

Steffee Hall of Life Sciences
Rooms B.108, B.208, B.212, and B.306

The Department of Biology is pleased to host its Twenty-Fifth Annual Senior Project Symposium to celebrate the biological research accomplishments of the Class of 2023. All members of the college community are invited and welcome to attend. Juniors, sophomores, and freshmen who are majoring or intending to major in Biology are especially encouraged to attend and participate.

Instructions for speakers

Time limits. Presentations will be limited to a maximum of 20 minutes - 15 minutes for formal presentation and 5 minutes for questions. Moderators at each session will enforce these time limits.

Audiovisual equipment. To ensure smooth transitions between speakers, students should either load their PowerPoint file onto the classroom presentation computer OR open their Google Slides presentation on the classroom computer **by 12:45 pm on the day of their presentation.**

Evaluation of presentations. Biology department faculty will evaluate talks based on nine criteria:

- (1) Adequacy of the introduction for persons unfamiliar with the specific area of research.
- (2) Clarity of the statement of objectives and hypotheses.
- (3) Adequacy of the explanation of methods and results.
- (4) Interpretation and discussion of results within the context of the particular sub-discipline.
- (5) Overall organization and clarity.
- (6) Engaging and enthusiastic delivery.
- (7) Quality and appropriateness of visual aids.
- (8) Adherence to the 15-minute time limit.
- (9) Effectiveness of response to questions.

Students should prepare their presentations with these criteria in mind.

2023 Biology Senior Project Symposium

Monday, April 24

Time		Steffee B.108 M=Humphreys, T=Mumme, E=Nelson	Steffee B.208 M=Kadmiel, T=Hersh, E= Dawson	Steffee B.212 M=Whitenack, T=Venisky, E=French	Steffee B.306 M=Coenen, T=Lundberg
1:10	<i>Speaker</i>	Tamir Nagga	David Kratzenberg	Vienna Kauffman	Brayden Cartwright
	<i>Title</i>	<i>The effect of CPMA on kv4.2 channel activity</i>	<i>Androgenic Gland Ablation in Male Crayfish, Procambarus clarkii, and its Effect on Neurogenesis</i>	<i>Correlating Antimicrobial Peptide Expression with Infection Status in Ixodes scapularis Ticks</i>	<i>Investigation of inhibition of chemotaxis by various concentrations of the chemorepellent 8-CPT in the model organism Dictyostelium discoideum</i>
	<i>Advisor</i>	<i>French</i>	<i>French</i>	<i>Hersh</i>	<i>Nelson</i>
1:30	<i>Speaker</i>	Hannah Sharp	Alexandra Hasson	Haley Stabile	Rachel Walters
	<i>Title</i>	<i>Comparing the Impact of Distractions on Pain Perception, Using the Cold Pressor Test</i>	<i>Puncture Performance of Shark Teeth from Carcharhinus plumbeus on Various Prey Items</i>	<i>Formation of a Chimeric Gene in Exploring the Functional Conservation of the Mms21-ligase Domain Between Dictyostelium discoideum and Saccharomyces cerevisiae</i>	<i>Impact of Agriculture on Echinostoma Burdens in Ramshorn Snails (Planorbium corneus) of Crawford County</i>
	<i>Advisor</i>	<i>French</i>	<i>Whitenack</i>	<i>Nelson</i>	<i>Venisky</i>
1:50	<i>Speaker</i>	Emily Spitz	Sierra Eger	Lottie Mateyak	Dalton Lodzins
	<i>Title</i>	<i>Generating novel col4a1 gene mutations in Drosophila melanogaster using CRISPR/Cas9</i>	<i>Antibacterial Effectiveness of Mentha spicata Extract Against Haemophilus ducreyi</i>	<i>Investigating the Role of β-catenin homologue Aardvark in Successful Cell Cycle Synchronization in Dictyostelium discoideum</i>	<i>The Killing Activity of Lactic Acid and Hydrogen Peroxide on Two Strains of H. ducreyi</i>
	<i>Advisor</i>	<i>Hersh</i>	<i>Humphreys</i>	<i>Nelson</i>	<i>Humphreys</i>
2:10	<i>Speaker</i>	Sara Adams	Molly Peterson	Pierre Jaeggi	Rachel Olivares
	<i>Title</i>	<i>Effects of Vitamin Supplementation in Eastern Redback Salamanders on Batrachochytrium dendrobatidis Infection Burden</i>	<i>The Effect of Indole-3-Acetic Acid on Resistance to Tetracycline and Streptomycin in Pseudomonas fluorescens Pf-5 and Pseudomonas aeruginosa PA01</i>	<i>The Effects of Indole-3-acetic acid on Pseudomonas fluorescens Resistance to Hydrogen Peroxide</i>	<i>Response of Male Red-backed Salamanders to Chemical Cues of Males from Nearby and Distant Populations</i>
	<i>Advisor</i>	<i>Venisky</i>	<i>Coenen</i>	<i>Coenen</i>	<i>Mumme</i>
2:30	<i>Speaker</i>	Tanner Sliker	Juyi Shen	Ryan Martinez	
	<i>Title</i>	<i>Modeling Chronic Wasting Disease in Transgenic Drosophila</i>	<i>Minimum Lethal Concentration of Vancomycin and Chitosans Against Haemophilus ducreyi</i>	<i>Effects of Temperature on the Lateral Line Orientation Response in the Mottled Sculpin Cottus bairdii</i>	
	<i>Advisor</i>	<i>Hersh</i>	<i>Humphreys</i>	<i>Mumme</i>	
2:50		***** COOKIE BREAK! Steffee B201 *****			
3:10	<i>Speaker</i>	Hanah Simmons	Eva Kerr	Ciara Lovell	
	<i>Title</i>	<i>Effects of Innexin 2 knockdown on Antimicrobial peptide production in a Leukemic mxc mutant Drosophila melanogaster model system</i>	<i>Determination of Terrestrial Salamander Diversity Relative to Edge Habitats and Sampling Type on Conserved Properties in Northwestern Pennsylvania</i>	<i>Mechanisms of Glucocorticoid Receptor in Wound Healing of Human Corneal Epithelial Cells</i>	
	<i>Advisor</i>	<i>Hersh</i>	<i>Bradshaw-Wilson</i>	<i>Kadmiel</i>	
3:30	<i>Speaker</i>	Autumn Peterson	Katherine Mowry	Robert Kusinsky	
	<i>Title</i>	<i>Effect of Anti-VEGF Bevacizumab vs. Corticosteroid Dexamethasone in Human Retinal Epithelial Cells Growing Under High Glucose to Mimic Diabetic Retinopathy</i>	<i>A Test of the River Continuum Concept in Stream Orders of Varying Human Impact</i>	<i>Knockdown of TDP-43 Protein to Model ALS in Drosophila melanogaster</i>	
	<i>Advisor</i>	<i>Kadmiel</i>	<i>Venisky</i>	<i>Hersh</i>	
3:50	<i>Speaker</i>	Nina Claudio	Joshua Heiser	Delaney Kronheim	
	<i>Title</i>	<i>Cross Sectional Study on Shoulder Impingement using Electromyography on</i>	<i>Assessing Acoustic Niche Partitioning in Temperate Forest and Scrub Bird Communities</i>	<i>Exploring methods of studying the impact of cell adhesion genes in Dictyostelium discoideum: cadA, cad2, and cad3</i>	

		<i>Allegheny College NCAA Division III Female Volleyball Athletes</i>			
	<i>Advisor</i>	<i>Whitenack</i>	<i>Mumme</i>	<i>Nelson</i>	
4:10	<i>Speaker</i>	Shane Cafardi	Gabriella Brady	Concetta Panza	
	<i>Title</i>	<i>The relationship between disease and competition for cover objects among <i>Desmognathus fuscus</i> and <i>Plethodon cinereus</i></i>	<i>The Effects of Probiotic Supplementation on Anxiety-Like Behavior and Interleukin-6 Production</i>	<i>Utilizing Combination Drug Therapy to Inhibit <i>Haemophilus ducreyi</i> Growth and Reduce Antibiotic Resistance</i>	
	<i>Advisor</i>	<i>Venesky</i>	<i>Bertholomey</i>	<i>Humphreys</i>	

2023 Biology Senior Project Symposium Tuesday, April 25

Time		Steffee B.208 M=Venesky, T=French, E=Dawson	Steffee B.212 M= Nelson, T= Humphreys, E=Mumme	Steffee B.306 M=Hersh, T= Whitenack, E=Kadmiel
1:10	<i>Speaker</i>	Ahmed Bakri	Nicholas Cimillo	Laura Haney
	<i>Title</i>	<i>Effect of Glucocorticoids on Human Retinal Cells Under Diabetic Conditions</i>	<i>Inflammation Response of Glucocorticoids on Diabetic Retinopathy in a Model of Time-Pregnant Mice Pups (C57BL/6J)</i>	<i>Effects of Phenolic and Seed Antioxidant Levels of Four Legume Species on Reproduction, Oviposition and Fecundity of <i>Callosobruchus maculatus</i></i>
	<i>Advisor</i>	<i>Kadmiel</i>	<i>Kadmiel</i>	<i>Coenen</i>
1:30	<i>Speaker</i>	Paige Camp	Chelsea Esser	Kelsi Zik
	<i>Title</i>	<i>The Effect of Overexpressed FbxA on PKA Activity in <i>Dictyostelium discoideum</i></i>	<i>How Do Different Upper Body Stretches Affect Range of Motion of the Shoulder and the Speed of a Lacrosse Shot</i>	<i>Comparing Athlete Gender Differences in Pain Perception using the Cold Pressor Task</i>
	<i>Advisor</i>	<i>Nelson</i>	<i>Whitenack</i>	<i>French</i>
1:50	<i>Speaker</i>	Marissa Callender	Ella Lunney	Tristen Donovan
	<i>Title</i>	<i>Antimicrobial effect of Cinnamomum cassia, Cinnamomum zeylanicum, eugenol, and cinnamaldehyde against <i>Haemophilus ducreyi</i></i>	<i>Potential Interactions between <i>Batrachochytrium dendrobatidis</i> and Behavior in <i>Plethodon cinereus</i></i>	<i>Rana Tadpole Survival Rate and Infection Load After Exposure to <i>Batrachochytrium dendrobatidis</i> in Combination With Various Salt Concentrations</i>
	<i>Advisor</i>	<i>Humphreys</i>	<i>Venesky</i>	<i>Venesky</i>
2:10	<i>Speaker</i>	Bella Terman	Raegan Myers	Emma Ruhl
	<i>Title</i>	<i>FbiA as a potential target for FbxA-mediated Ubiquitination and Degradation in <i>Dictyostelium discoideum</i></i>	<i>Death by Inflammation: Chronic effects of Dexamethasone on Pyroptosis in A549 Lung Cancer Cells</i>	<i>Health Disparities in HPV Vaccination Rates Across the United States of America: An Ecological, Epidemiological study</i>
	<i>Advisor</i>	<i>Nelson</i>	<i>Kadmiel</i>	<i>Dawson</i>
2:30	<i>Speaker</i>	Mallory Collins	Jacob Smith	Emma Yesko
	<i>Title</i>	<i>The role of Gap Junction Proteins, <i>Inx2</i> and <i>Inx3</i>, in the Innate Immune Response of <i>D. melanogaster</i></i>	<i>Characterization of the Inflammatory Response in ATG16 <i>Drosophila</i> Mutants</i>	<i>Exploring the factors associated with an amphibian die off-at Bousson Environmental Research Reserve: analysis for the presence of ranavirus</i>
	<i>Advisor</i>	<i>Hersh</i>	<i>Hersh</i>	<i>Venesky</i>
2:50		***** COOKIE BREAK! Steffee B201 *****		
3:10	<i>Speaker</i>	Macy White	Skyler Masse	Hadi Al Khafaji
	<i>Title</i>	<i>Comparing the Growth of <i>Haemophilus ducreyi</i> in the Presence of the Male and Female Normal Flora</i>	<i>Nonurgent Utilization of the Meadville Medical Center Emergency Department: A Statistical Analysis</i>	<i>Impact of <i>Batrachochytrium dendrobatidis</i> (Bd) on Intraspecific Competition in <i>Plethodon cinereus</i> (Red-backed Salamander)</i>
	<i>Advisor</i>	<i>Humphreys</i>	<i>Dawson</i>	<i>Venesky</i>
3:30	<i>Speaker</i>	David Thibault	Kendall Crum	Marianna Salinas
	<i>Title</i>	<i>Measuring response to ammonia in <i>Dictyostelium discoideum</i> Atg mutants</i>	<i>The Evaluation of Benzoyl Peroxide and Hypochlorous Acid as Potential Treatments for Staphylococcus epidermidis Infections after Breast Augmentation Surgery</i>	<i>Evaluation of The Multidisciplinary Care of Adults with Congenital Illnesses: The Spina Bifida Perspective</i>
	<i>Advisor</i>	<i>Nelson</i>	<i>Coenen</i>	<i>Dawson</i>
3:50	<i>Speaker</i>	Ryan Sesler	Heather Veleta	Trenton Kramer

	<i>Title</i>	<i>The Effects of Wear on the Morphology and Puncture Force of Shark Teeth</i>	<i>Effects of antioxidants, pomegranate juice and kaempferol, on familial Parkinson's Disease model of Drosophila melanogaster with normal and reduced levels of dopamine</i>	<i>A Genetic Comparison of Baker's and Brewer's yeast</i>
	<i>Advisor</i>	<i>Whitenack</i>	<i>Hersh</i>	<i>Mumme</i>
4:10	<i>Speaker</i>	Mary Rose Dosch	Abigail Waryanka	Miranda Yeager
	<i>Title</i>	<i>The Analysis of the effects of Dexamethasone on Human Retinal Epithelial Cells with Blue and Red Light conditions</i>	<i>DEG-PI: A Computational Tool that Identifies Differentially Expressed Genes and Enriched Pathways in Cancer Tissues</i>	<i>Fluoride, basil oil, and eugenol effects on growth of Streptococcus mutans</i>
	<i>Advisor</i>	<i>Kadmiel</i>	<i>Dawson</i>	<i>Coenen</i>