

# 2024 Biology Department Senior Project Symposium

## Allegheny College

### Student Presentations:

**Monday & Tuesday, April 22-23, 1:10-4:30 p.m.**

Steffee Hall of Life Sciences  
Monday: B208, B306, and B316  
Tuesday: B306, B312, and B316  
Preparation Room: B302  
Cookie Breaks: B201

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 2024. 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.

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### 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.

## 2024 Biology Senior Project Symposium Monday, April 22

Time		Session I - Steffee B.208 M=Houtz, T=Nelson, E=Demi	Session II - Steffee B.306 M=Whitenack, T=Coenen, E=Lundberg	Session III - Steffee B.316 M=Humphreys, T=Kadmiel, E=Dawson
<b>1:10</b>	Speaker	<b>Anastazia Herbst</b>	<b>Emily Herrold</b>	<b>Maya King</b>
	Title	Assessing immune response in <i>Plethodon cinereus</i> using <i>Phytohemagglutinin</i> injections and <i>Batrachochytrium dendrobatidis</i>	Estrogen and Cortisol Fluctuations Throughout the Menstrual Cycle in Athletes in Association with ACL Injuries	The Impact of Wear on Morphology and Draw Force of Shark teeth
	Advisor	Venesky	Dawson	Whitenack
<b>1:30</b>	Speaker	<b>Dawit Kahesay</b>	<b>Jonathan Sharp</b>	<b>Anjolina Hrycko</b>
	Title	Examination of <i>Cytochrome C Oxidase Enzyme</i> Presence in <i>Haemophilus ducreyi</i> through interactions with <i>Kovac</i> and <i>Gaby-Hadley</i> reagents.	JAK2 Inhibition of <i>FLT3 Mutated Acute Myeloid Leukemia</i> Cells to Induce Apoptosis and Differentiation	Analyzing Morphological Changes in <i>Buteo jamaicensis borealis</i> Before and After the Passage of the Endangered Species Act
	Advisor	Humphreys	Kadmiel	Whitenack
<b>1:50</b>	Speaker	<b>Christopher Rubino</b>	<b>Erin T. O'Neill</b>	<b>Sofia Maass</b>
	Title	Can a deadly fungal disease affect the metabolic rate of <i>Plethodon cinereus</i> ?	<i>Glucocorticoid</i> Receptor Mediated DNA Repair Mechanisms in Human Corneal Epithelial Cells	Effects of Secondary <i>Metabolites</i> and <i>Coevolution</i> on Insect Herbivory in the Plant Families <i>Asteraceae</i> and <i>Fabaceae</i>
	Advisor	Venesky	Kadmiel	Venesky
<b>2:10</b>	Speaker	<b>Morgan Leshniowsky</b>	<b>Ashley Amato</b>	<b>Gabe McCollum</b>
	Title	A Comprehensive Analysis of the Psychiatric Use of the Meadville Medical Center Emergency Department	Inhibition of <i>H. Ducreyi</i> by Manuka Honey	Running on Caffeine: Investigating the Effects of Caffeine on Mouse Physical Performance
	Advisor	Dawson	Humphreys	Whitenack
<b>2:30</b>	Speaker	<b>Sydney Watko</b>	<b>Kathryne Reed</b>	<b>Olivia Kost</b>
	Title	Isolating Phages That Infect <i>Haemophilus ducreyi</i>	Unveiling Athletic Asymmetry: Investigating Injury Disparities Between Dominant-Sided and Ambidextrous Athletes	Assessing Extracts of <i>Arctostaphylos uva-ursi</i> as an Inhibitor of Biofilm Formation by <i>Pseudomonas aeruginosa</i> (PAO1) on Urinary Catheters
	Advisor	Humphreys	Dawson	Coenen
<b>2:50</b>	***** COOKIE BREAK! Steffee B201 *****			
<b>3:10</b>	Speaker	<b>Grace Sorger</b>	<b>Apurva Kannu</b>	<b>Abigail Shaffer</b>
	Title	Effects of the Plant <i>Phenolic Genistein</i> on <i>Callosobruchus maculatus</i> <i>Oviposition</i>	Genetic Insights into ACL Tears: Exploring the Association of Type 1 <i>Collagen Polymorphisms</i> and <i>Anterior Cruciate Ligament</i> Tears	Sublethal Effects of <i>Rosmarinus officinalis</i> Extract on <i>Euborellia annulipes</i> Reproduction
	Advisor	Coenen	Dawson	Coenen
<b>3:30</b>	Speaker	<b>Megan Lowenguth</b>	<b>Courtney Kaufman</b>	<b>Savanna Hindman</b>
	Title	Inhibition of <i>Haemophilus ducreyi</i> by Plant Extract <i>Ficuseptine</i>	Factors affecting chronic wound healing: Systematic review and meta-analysis	Characterizing CRISPR-generated <i>col4a1</i> mutations in <i>Drosophila melanogaster</i>
	Advisor	Humphreys	Dawson	Hersh
<b>3:50</b>	Speaker	<b>Angelina Cottril</b>	<b>Matthew Taliani</b>	<b>Eden Brody</b>
	Title	<i>Biofertilization</i> and <i>Biofortification</i> of <i>Allium porrum</i> through Inoculation with <i>Arbuscular Mycorrhizal Fungi</i> over a Compost Gradient	Microbiome Variation in <i>Callosobruchus maculatus</i> Raised on Four Different Types of Legumes	Impacts of Land Use and Sedimentation on Brown Trout ( <i>Salmo trutta</i> ) Populations in a High Quality (Class A) Fishery
	Advisor	Coenen	Humphreys	Bradshaw-Wilson
<b>4:10</b>	Speaker	<b>Lainee Swanson</b>	<b>Sheyli Wetzel</b>	<b>Tyler Znaczo</b>
	Title	The Effects of FLT3 Inhibition on FLT3-Mutated <i>Acute Myeloid Leukemia</i> Cells as a Potential Novel Treatment	The Variations of Tick Density Patterns Throughout the Seasons	Exploring Negative Chemotaxis Interactions of Two Attractants in <i>Dictyostelium discoideum</i>
	Advisor	Kadmiel	Venesky	Nelson

## 2024 Biology Senior Project Symposium

### Tuesday, April 23

Time		<b>Session IV - Steffee B.306</b> M=Kadmiel, T=Dawson, E=Humphreys	<b>Session V - Steffee B.312</b> M=Coenen, T=Lundberg, E=Whitenack	<b>Session VI - Steffee B.316</b> M=Nelson, T=Demi, E=Houtz
<b>1:30</b>	Speaker	<b>Alexandria Hunt</b>	<b>Caleb Alters</b>	<b>Brooke Belfiore</b>
	Title	Effects of meteorological conditions on waterfowl population and intake reasons: measured by rehabilitation center data	The Effects of Estrogen on LPS Induced Ocular Inflammation in Male and Female Mice	Inhibition of <i>Staphylococcus aureus</i> by Essential Oil Combinations
	Advisor	Whitenack	Kadmiel	Humphreys
<b>1:50</b>	Speaker	<b>Kaylee Sadowski</b>	<b>Steffi Puthenpurayil</b>	<b>Blake Neiderlander</b>
	Title	Identification of Yeasts in Kefir and The Yeast Supernatant Ability to Regulate <i>Pseudomonas aeruginosa</i>	High Glucose Induced Oxidative Stress in Human Retinal Cells in the Presence and Absence of <i>Glucocorticoid Signaling</i>	Mechanisms of Macrophage Plasticity Mediated By <i>Dexamethasone</i> and <i>Aldosterone</i>
	Advisor	Coenen	Kadmiel	Kadmiel
<b>2:10</b>	Speaker	<b>Genevieve Feltmeyer</b>	<b>Zach Altenbaugh</b>	<b>Elizabeth Teufel</b>
	Title	Effects of a Fungal Pathogen on the Skin Bacteria Abundance of the Eastern Newt	The Effect of Weather Conditions on the Distribution of <i>Plethodon cinereus</i> in Nature	Effects of Downward Shifting vs. Constant Temperatures on the Host-Pathogen Interaction Between the Red-Backed Salamander ( <i>Plethodon cinereus</i> ) and the Amphibian Chytrid Fungus ( <i>Batrachochytrium dendrobatidis</i> )
	Advisor	Venesky	Venesky	Venesky
<b>2:30</b>		***** <b>COOKIE BREAK! Steffee B201</b> *****		