

2019 Biology Department Senior Project Symposium

Allegheny College

Student Presentations:

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

Steffee Hall of Life Sciences, Rooms 208, 212, and 306

The Department of Biology is pleased to host its Twenty-Second Annual Senior Project Symposium to celebrate the biological research accomplishments of the Class of 2019. 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. A computer presentation projector will be available in all rooms. Students wishing to illustrate their talks using PowerPoint should bring copies of their PowerPoint file on a flash drive and be prepared to download their presentation. For Google Slides, they should download as a PDF, then save it. There are potential problems using Google Slides directly and/or downloading onto the desktop. **Students should load their presentation onto the presentation computer in their assigned room between 12:30 and 1:00 pm on the day of the 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.

2019 Biology Senior Project Symposium
Monday, April 22

Time	Steffee B.208 (M) Donmoyer, (T) Thu, (E) Dawson			Steffee B.212 (M) Humphreys, (T) Whitenack, (E) Kleinschmidt			Steffee B.306 (M) French, (T) Lundberg, (E) Coates			
	1:10	Speaker	Katelyn Mays	Gabriel Curtisbrown	George Opara	Disruption of <i>Haemophilus ducreyi</i> biofilms with a commercial probiotic	On the detection of <i>Borrelia burgdorferi</i> in <i>Ixodes scapularis</i> via PCR as well as a discussion on the impact of Lyme disease diagnosis	Ecological Morphology of darter fishes	Advisor	Dr. Humphreys
1:30	Speaker	Alexandra Zelazny	Ryan Hammer	Alexandra Pope	Kin Selection in <i>Drosophila melanogaster</i> and the Effect of Familial Relationship on Female Reproduction	The Effect of Temperature on Aggression Behaviors Exhibited by Red-backed Salamanders (<i>Plethodon cinereus</i>) in Response to a Competitor	<i>Musca domestica</i> (houseflies): potential mechanical vectors for <i>Haemophilus ducreyi</i> transmission in yaws-endemic countries	Advisor	Dr. Mumme / Dr. Clark	Dr. Humphreys
1:50	Speaker	Heidi Mueller	Jennifer Johnson	Tristan Rhoades	Differential Effects of <i>Lactobacillus</i> Species Independently and in Combination on <i>Haemophilus ducreyi</i> Growth	Growth and Biofilm Formation of <i>Pseudomonas aeruginosa</i> in the Presence of Glucose and Auxin	The effects of dietary supplemental combinations on physical performance in late adolescent mice (<i>Mus musculus</i>)	Advisor	Dr. Humphreys	Dr. Whitenack
2:10	Speaker	Elizabeth Kee	Molly Martin	Cristin Archer	Stress appraisal, cardiovascular reactivity, and recovery in relation to perceived life stress	The effect of aromatherapy on the early symptoms of Alzheimer's disease	The Susceptibility of Larval <i>Ambystoma mexicanum</i> to <i>Batrachochytrium dendrobatidis</i>	Advisor	Dr. Conklin / Dr. French	Dr. Venesky / Dr. Choate
2:30	Speaker	Ethan Pawlak	Alan Cuevas Villagomez	Matthew Kim	The Effects of Phosphorus Deficiency on Aerenchyma Formation and Peroxidase Activity in Corn (<i>Zea mays</i>)	Effects of innexin 2, 3 and 5 on the innate immune response to <i>Drosophila Melanogaster</i> tumorigenesis	Combination Drug Therapy Reduces the Antibiotic Concentration Needed to Treat a <i>Haemophilus ducreyi</i> Infection	Advisor	Dr. Coenen	Dr. Humphreys
2:50	*** COOKIE BREAK! Steffee B.201 ***									
3:10	Speaker	Jesse Ottaway	Cassandra Dodson	Brittany Imel	Attempting to suppress the carbapenemase-encoding <i>bla_{KPC-2}</i> gene using antisense Peptide Nucleic Acid (PNA)	Effectiveness of Hand Soap and Hand Sanitizer of GFP-expressing <i>Escherichia coli</i> in a model of Disease Transmission	Effects of Caffeine on Diabetic Cataracts in Mice	Advisor	Dr. Hersh	Dr. Donmoyer
3:30	Speaker	Tyanna Eaddy-Harris	Benjamin Fennell	Bailey Pifer	Turmeric, an anti-inflammatory herb remedy that has similar analgesic properties to lidocaine in mice	Antioxidant Enzyme Response to Metal-Induced Oxidative Stress in <i>Solanum lycopersicum</i>	The Use of Gene Expression to Determine the Effect of Virus Innexin Q1 and Virus Innexin Q2 on Immune Response	Advisor	Dr. Coates	Dr. Hersh
3:50	Speaker	Evin Fitzgerald	Andrea Pence	Brittany Lutheran	Effects of Tooth Wear in Lemon Sharks (<i>Negaprion brevirostris</i>)	An Exploration of <i>Conus</i> Crude Venom Application on the Kv4.2 Ion Channel in a <i>Xenopus Laevis</i> Expression Model	Indirect transmission of <i>Batrachochytrium dendrobatidis</i> in <i>Rana clamitans</i>	Advisor	Dr. Whitenack	Dr. Venesky / Dr. Choate
4:10	Speaker	Madison Hartner	Chioma Alaka	Julia Harkin	The Effect of Dietary Intake on <i>Batrachochytrium dendrobatidis</i> Infection Intensity in the Red-backed Salamander	The Apoptotic Pathway of the IRBP-deficient mouse	Differences Between Basal and Stress-Induced Mitophagy and Correlation with Onset of Parkinson's Disease	Advisor	Dr. Venesky	Dr. Hersh

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Tuesday, April 23

Time	Steffee B.208 (M) Venesky, (T) Dawson, (E) Thu		Steffee B.212 (M) Hersh, (T) Mumme, (E) Humphreys		Steffee B.306 (M) Lundberg, (T) French, (E) Coenen							
	1:10	Speaker	Sadie Longo	Megan Hazlett	Ashlee Rowles	Title	Investigating the Effects of Altering the DNA Sequences Outside of the UBX Core Target	Identifying Potential Brook Trout (<i>Salvelinus fontinalis</i>) Populations Based on Summer Temperature and Watershed Characteristics	Effects of Obesity on Breathing Apnea and Ventilatory Response to CO ₂ in Neonatal Mice	Advisor	Dr. Hersh	Dr. Wissinger / C. Shaffer
1:30	Speaker	Zachery Sucharski	Taylor Vigneri	Brianna Kunes	Title	<i>Optimizing an Exogenous Expression System to Examine the 5-HT₆ Receptor in Isolation</i>	Influence of Agriculture on <i>Planorbella</i> Abundance	Molecular and Evolutionary Analysis of UBX-Responsive Cis-Regulatory Elements Across <i>Drosophila</i> Species	Advisor	Dr. French	Dr. Venesky	Dr. Hersh
1:50	Speaker	Sarah Hevener	Kalena Grimes	Louis McUmbert	Title	Effects of Halofuginone on Growth of <i>L. acidophilus</i> and <i>B. vulgatus</i>	The molecular level of Alzheimer's Disease : Aβ42 and its inhibition of the hSlo channel	Effects of Exogenous Testosterone on <i>Batrachochytrium dendrobatidis</i> Infection of Male Red-backed Salamanders, <i>Plethodon cinereus</i>	Advisor	Dr. Coenen	Dr. French	Dr. Venesky
2:10	Speaker	Tessa Lutterman	Alexandra Grob	Khanyisile Baloyi	Title	The Effect of increased serotonin on AB production in BACE1 KO Alzheimer's Disease Model mice	The Effects of Auxin, Time, and Surface Material on Biofilm Formation of <i>Pseudomonas aeruginosa</i>	The Growth of <i>Haemophilus ducreyi</i> in the Presence of the Non-human Antimicrobial Peptides Bactenecin and Cecropin	Advisor	Dr. Coates	Dr. Coenen	Dr. Humphreys
2:30	Speaker	Kaylee Crossen	Kaylah Pinkney	Morgan Ritchie	Title	The Role of gap Junctions in <i>Drosophila</i> Intestines and IBD-Like Inflammation	The Effect of omega-3 diet and musical stimuli on memory in Alzheimer's disease model mice	The Effects of Pond Permanency on the Snail (<i>Planorbella</i>) Abundance in Northwestern Pennsylvania	Advisor	Dr. Hersh	Dr. Coates	Dr. Venesky
2:50	*** COOKIE BREAK! Steffee B.201 ***											
3:10	Speaker	Katharine Hubert	Arden Delphey	Natali Salaytah	Title	Examining interactions between collagen mutations and the immune system in <i>Drosophila melanogaster</i>	Varying acclimation to temperature shifts may impact chytrid infection in the eastern red-backed salamander (<i>Plethodon cinereus</i>)	The Interaction of Sex and Oxytocin on Social Instability Stress in Sprague-Dawley Rats	Advisor	Dr. Hersh	Dr. Venesky	Dr. Mumme / Dr. Clark
3:30	Speaker	Michaela Schlichtkrull	Laurence Busque	Casey Young	Title	Antibacterial Effects of Manuka Honey and <i>Mahonia aquifolium</i> on the Growth of <i>Staphylococcus aureus</i>	The comparison of mutations of OSCA-32 and OSCA-40 in the SETD2 Gene	Effects of Prenatal Exposure to SSRIs and SNRIs on Breathing Response to Hypercapnia	Advisor	Dr. Humphreys	Dr. French	Dr. Coates
3:50	Speaker				Title				Advisor			
4:10	Speaker				Title				Advisor			