



2018 Annual Meeting

Montana Academy of Sciences

Student Union, Montana Tech, April 6&7, 2018

Overview

Friday, April 6, 2018

4:30 pm - 6:00 pm	Registration (<i>Lobby</i>)
4:30 pm - 5:30 pm	Poster Setup and Preparation (<i>Big Butte/Highlands Room</i>)
5:30 pm - 7:00 pm	Reception and Poster Session (<i>Big Butte/Highlands Room</i>)
7:00 pm - 8:00 pm	<i>MAS Annual Banquet (Copper Lounge)</i>
8:55 pm - 9:30 pm	Poster Session (Continued), (<i>Big Butte/Highlands Room</i>)

Saturday, April 7, 2018

7:30 am - 9:00 am	Board of Directors Meeting (<i>Pintler Room</i>)
8:00 am - 8:50 am	<i>Breakfast Buffet (South side of Marcus Deli in the SUB)</i>
9:00 am - 10:30 am	Oral Presentations, Session I (<i>Copper Lounge</i>)
9:30 am - 2:00 pm	<i>Junior Academy Breakout Session (Kelley/Steward Room)</i>
10:30 am - 10:45 am	<i>Coffee Break (SUB Lobby)</i>
10:45 am - 12:00 pm	Oral Presentations, Session II (<i>Copper Lounge</i>)
12:00 pm - 1:00 pm	<i>Lunch, and New This Year for the MJAS, "Lunch with Scientists" (both in the Marcus Deli of the SUB); Presentation of the Brumley Family Science Mentor of the Year Award, Mr. Rob Jensen</i>
1:00 pm - 2:00 pm	<i>MTJAS attendees, Tour of the Montana Tech Mineral Museum</i>
1:00 pm - 2:15 pm	Oral Presentations, Session III (<i>Copper Lounge</i>)
2:15 pm - 2:30 pm	<i>Coffee Break, Lobby</i>
2:30 pm - 3:30 pm	Oral Presentations, Session IV, (<i>Copper Lounge</i>)
3:45 pm	Adjourn

Please Note: Abstracts of presentations can be found on the MAS web site at

http://sciencemt.org/MAS/?page_id=29

Friday, April 6, 2018

Big Butte/Highlands Room

POSTER PRESENTATIONS

(Alphabetical by Title)

***Indicates Presenting Author**

ANALYSIS OF MODIFIED VACCINIA ANKARA TROPISM AND GROWTH CONDITIONS. *Synda Boumediene **, *Biological and Physical Sciences, Montana State University-Billings, Billings.*

ASSESSMENT OF THE OCCURRENCE AND DISTRIBUTION OF UNPERMITTED WASTEWATER TREATMENT SYSTEMS ALONG A SECTION OF BOZEMAN CREEK AND IDENTIFICATION OF RECOMMENDATIONS TO ADDRESS FECAL CONTAMINATION. *Kaylian Welsh **, *Microbiology & Immunology, Montana State University, Bozeman, Gallatin City County Health Department, Bozeman, and GIS, Gallatin County, Bozeman.*

COXIELLA BURNETII'S INFECTION-SPECIFIC SMALL RNA 12 (CBSR12) TARGETS CARA AND METK TRANSCRIPTS. *Shaun Wachter **, *Department of Biological Sciences, The University of Montana, Missoula. (2018 Graduate Grant Awardee)*

CREATING AN EFFECTIVE PUBLIC HEALTH CAMPAIGN REGARDING THE POTENTIAL HEALTH RISKS OF CHRONIC WASTING DISEASE. *Kirina Amada**, *Microbiology & Immunology, Montana State University, Bozeman.*

DETERMINING THE PLACE OF AQP-3B IN THE WNT/CA2+ NONCANONICAL PATHWAY. *Oscar Machado**, *Cell Biology and Neuroscience, Montana State University, Bozeman. (2018 Undergraduate Grant Awardee)*

DOES AQUAPORIN 3B AFFECT THE NUMBER AND CHARACTERISTICS OF CALCIUM WAVES IN THE NEURAL PLATE OF XENOPUS LAEVIS EMBRYOS. *Dean Ricker **, *Chemical Engineering, Montana State University, Bozeman.*

EFFECTS OF DOPAMINE BETA HYDROXYLASE LEVELS IN A MOUSE MODEL OF FD. *Richard Buksch**, *Physical and Biological Sciences, Montana State University-Billings, Billings.*

EXAMINING THE CORRELATION BETWEEN COLIFORM BACTERIA AND HUMAN WASTEWATER IN HOME WELL WATER. *McKay Reed **, *Environmental Health Microbiology, Montana State University, Bozeman.*

GAP JUNCTION EXPRESSION AND FUNCTION IN XENOPUS LAEVIS EMBRYOS. *Theodore Warthen**, *Biological Engineering, Montana State University, Bozeman.*

HOST SPECIALIZATION OF THE PROKARYOTIC PREDATOR BDELLOVIBRIO BACTERIOVORUS. *Clara Davison, Division of Biological Sciences, University of Montana, Missoula.*

HOW AQP3B INFLUENCES CONVERGENT EXTENSION THROUGH NONCANONICAL WNT SIGNALING. *Kaitlyn See *, Cell Biology & Neuroscience, Montana State University, Bozeman. (2018 Undergraduate Grant Awardee)*

INFLUENZA GROWTH VARIATIONS WITHIN MDCK CELLS. *Caitlyn Root*, Biological & Physical Sciences, Montana State University - Billings, Billings.*

INVESTIGATING THE BINDING OF BH3I-1 DERIVATIVES TO THE BCL-XL PROTEIN. *David Butler*, Biological & Physical Sciences, Montana State University-Billings, Billings.*

INVESTIGATION OF ON-SITE WASTEWATER TREATMENT SYSTEM SUITABILITY FOR FLOODPLAINS. *Hannah Monaghan *, Center for Biofilm Engineering, Montana State University, Bozeman, and Gallatin City/County Health Department, Bozeman.*

LONG-TERM VEGETATION RESPONSE TO GRAZING ON A SOUTHWEST MONTANA FOOTHILLS RANGE. *Noah Davis, Animal and Range Sciences, Montana State University, Bozeman. (2018 Undergraduate Grant Awardee)*

MATERNAL EFFECTS OF ASEPTIC AND SEPTIC INJURY ON EMBRYONIC LARVAL GENE EXPRESSION IN THE TOBACCO HORNWORM, *MANDUCA SEXTA*. *Patrick Anderson*, Biology/Northeastern REU, University of Providence, Great Falls.*

NATURAL AND SYNTHETIC DRUG ANALYSIS IN BLOWFLY LARVAE AND PIG TISSUE. *Haley Fallang *, Chemistry, University of Providence, Great Falls.*

SMALL MOLECULE INHIBITION OF GRAM-POSITIVE BACTERIA *S. AUREUS* AND *C. DIFFICILE*. *Aaron Sharp *, Biological & Physical Sciences, Montana State University - Billings, Billings.*

SYNTHESIS AND CHARACTERIZATION OF [CU(PDTC)L] COORDINATION COMPOUND SERIES (A). *Mohammadreza Heidari*, Biological & Physical Sciences, MSU-Billings, Billings.*

SYNTHESIS AND CHARACTERIZATION OF [PD(PDTC)L] COORDINATION COMPOUNDS (B). *Kelton Houston*, Science, Biological & Physical Sciences, MSU-Billings, Billings.*

THE EFFECTS OF PULSED ELECTRICAL STIMULATION ON THE QUADRICEPS FEMORIS MUSCLE PRIOR TO EXERCISE. *Evalani Dahlin*, Biology, University of Providence, Great Falls.*

XFE2, A DIRECT TARGET OF ZIC1, IS INVOLVED IN NEURAL CREST DEVELOPMENT. *Lillian Ball*, Cell Biology and Neuroscience, Montana State University, Bozeman.*

Saturday, April 7, 2018

ORAL PRESENTATIONS

**Indicates Presenting Author*

Session 1 (Copper Lounge)

- 9:00 HYALURONIC ACID CONJUGATED WITH ANTIOXIDANTS FOR TREATMENT OF CMV-INDUCED HEARING LOSS. *Zoe Peach-Riley **, *Hellgate High School, Missoula, MT (2018 Winner: Junior Academy, Scientific Research Paper Competition)*
- 9:15 REQUIREMENTS FOR AGGRESSION: ALTERING EAAT1 EXPRESSION TO MANIPULATE GLUTAMATE UPTAKE IN DROSOPHILA MELANOGASTER. *Lucy Sirrs **, *Hellgate High School, Missoula, MT (2018 Junior Academy, Scientific Research Paper Competition)*
- 9:30 CHARACTERIZING EXCITED STATE DIFFUSION IN PCDTBT USING TRANSIENT ABSORPTION MICROSCOPY. *Eric S. Massaro **, *Chemistry and Biochemistry, Montana State University, Bozeman (2018 Graduate Grant Awardee)*
- 9:45 EXPLORATION OF THE EFFECT OF PLATELET YIELD ON 5-7 DAY STORAGE (ORAL). *Aja Anderson**, *Biology, University of Providence, Great Falls, MT*
- 10:00 ANALYSIS OF ANTIMICROBIAL PEPTIDE EFFICACY AGAINST CHYTRIDIOMYCOSIS FROM SKIN SECRETIONS OF COLUMBIA SPOTTED FROGS (LITHOBATES LUTEIVENTRIS). *Emma Esposito **, *Biology, Carroll College, Helena, MT*
- 10:15 INVESTIGATING THE ROLE OF DNC-2 AND DLI-1 ON AMPA RECEPTOR MEDIATED BEHAVIORS IN C. ELEGANS. *Natalie Oberding **, *Biology, Carroll College, Helena, MT*
- 10:30 Coffee Break, Lobby**

Session II (Copper Lounge)

- 10:45 SINGLE PARENTS DESCRIBE BALANCING ROLES: PARENT AND STUDENT. *Rayvn Scott **, *Highlands College A. S., Montana Tech, Butte, MT*
- 11:00 MINERALOGY OF A URANIUM-COPPER BRECCIA PIPE. *Zane White * and Robert Hofer **, *Geological Engineering, Montana Tech, Butte, MT (Team Presentation)*
- 11:15 ECOLOGICAL EVALUATION OF RECLAMATION SUCCESS OF MINE SITES OF THE SAPPHIRE MOUNTAINS. *Jeremy Aal **, *Biology, Montana Tech, Butte, MT*
- 11:30 IN VITRO SYNTHESIS OF APATITE COATINGS ON TITANIUM ALLOY SP-700 TO IMPROVE BIOCOMPATIBILITY. *Ben Suslavich **, *Metallurgical & Materials Engineering, Montana Tech, Butte, MT*
- 11:45 CLONING gRNAs TO ENABLE CRISPR-MEDIATED HUMAN GENE KNOCKOUTS. *Teal Taylor **, *Organismal Biology, Montana Tech, Butte, MT*
- 12:00 Lunch**

**Indicates Presenting Author*

Session III (Copper Lounge)

- 1:00 COMPARISON & ANALYSIS OF LOCAL ENVIRONMENTAL METAGENOMICS AND DIVERSITY SEQUENCING DATA SETS. *Lucas Stout **, *Software Engineering, Montana Tech, Butte, MT*

- 1:15 DETECTION OF COLORADO TICK FEVER VIRUS IN DERMACENTOR ANDERSONI. *Zach Hart **, *Cell Molecular Biology, Montana Tech, Butte, MT*
- 1:30 INTEGRATION OF A FLUXGATE MAGNETOMETER AND GPS SYSTEM INTO AN UNMANNED AIRCRAFT SYSTEM. *Sierra Luoma **, *Geophysical Engineering, Montana Tech, Butte, MT*
- 1:45 GROUNDWATER/SURFACE WATER INTERACTIONS ON THE CLARK FORK RIVER. *Eva Hover **, *Geological Engineering, Montana Tech, Butte, MT*
- 2:00 PROSOCIAL BEHAVIOR AND EMPATHY: ANALYSIS OF EMOTIONAL RESPONSES DURING THE USE OF TED TALK VIDEOS IN THE CLASSROOM. *Robert Shelton **, *Highlands College A. S., Montana Tech, Butte, MT*
- 2:15 Coffee Break, Lobby**

Session IV (Copper Lounge)

- 2:30 METAL-MICROBE INTERACTIONS IN SILVER BOW CREEK. *Jordan Foster **, *Environmental Chemistry, Montana Tech, Butte, MT*
- 2:45 CALIBRATION AND APPLICATION OF MONTANA TECH SHAKE TABLE APPARATUS. *Brent Sordo **, *Geological Engineering, Montana Tech, Butte, MT*
- 3:00 ERGONOMIC EVALUATION OF A HIGH-PERFORMANCE GAMING INPUT DEVICE AND A COMPARISON WITH TRADITIONAL DEVICES. *Jacob Van Dyke **, *Occupational Safety and Health, Montana Tech, Butte, MT*
- 3:15 MECHANISTIC AND KINETIC INSIGHTS OF [CU(PDTC)L]. *Alexander Fryett **, *Biological and Physical Science, Montana State University Billings, Billings, MT*
- 3:30 ELONGATOR FUNCTION IN THE ANTERIOR PITUITARY AND ITS RELEVANCE TO FAMILIAL DYSAUTONOMIA. *Joseph Walters **, *Biological and Physical Sciences, Montana State University - Billings, Billings, MT*
- 4:00 Adjourn**

The Board of Directors of the Montana Academy of Sciences would like to express its thanks and appreciation to the following sponsors of the 2018 Annual Meeting

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MAS

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