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| **Poster Session I**Saturday, November 79:45a.m.-11a.m.Atrium**P-01-01****Presenter:** Amara Balhorn, St. Olaf College**Title:** A comparison of free-field and headphone based sound localization using SoloArc**Advisor(s):** Jeremy Loebach**P-01-02****Presenter:** Maddie Barron, Beloit College**Title:** Folypolygutamate Synthetae (FPGS) and the Plant Immune Response to Pathogen Infection**Advisor(s):** Amy G. Briggs**P-01-03****Presenter:** Stuart Behling, St. Olaf College**Title:** Characterization of phototactic behavior in hatchling snapping turtles (Chelydra serpentina)**Advisor(s):** Jay Demas**P-01-04****Presenter:** Beebie Boo, Macalester College**Title:** Repeated exposure to dinitrofluorobenzene (DNFB) induces local tissue changes**Advisor(s):** Devavani Chatterjea**P-01-05****Presenter:** Chandra Bouma, Gustavus Adolphus College**Title:** Photodegradation of imazethapyr herbicide on soy and corn plant surfaces**Advisor(s):** Amanda Nienow**P-01-06****Presenter:** Elizabeth Brown, St. Olaf College**Title:** Choline deficiency alters lipid droplet composition and size**Advisor(s):** Laura Listenberger**P-01-07****Presenter:** Lydia Craig, Macalester College**Title:** Heart Rate Variability and Canine Aggression**Advisor(s):** Julia Manor**P-01-08****Presenter:** Shanaz Daneshdoost, Grinnell College**Title:** COX-2 gene expression at the Anole lizard neuromuscular junction**Advisor(s):** Benjamin DeRidder and Clark Lindgren**P-01-09****Presenter:** Aline Desmarais, Washington University in St. Louis**Title:** Orexin system polygenic risk scores predict amygdala reactivity and habituation, as well as anxiety symptoms**Advisor(s):** Ryan Bogdan**P-01-10****Presenter:** Kira Downey, Macalester College**Title:** Immune Dysregulation in Mammary Carcinogenesis: Characterization of macrophage polarization response to PELP1-cyto expressing epithelial cells**Advisor(s):** Julie Ostrander**P-01-11****Presenter:** Katharine Dupree, Colorado College**Title:** Phylogenetic analysis of Pleurothallis (Orchidaceae) subgenera Anciptia and Scopula**Advisor(s):** Mark Wilson**P-01-12****Presenter:** Harrisonford Fauni, Macalester College**Title:** Image Optimization of Immunostained Calcium-Binding Proteins in Neocortical and Hippocampal Pyramidal Cells**Advisor(s):** Dr. Felix Eckenstein**P-01-13****Presenter:** Megan Freiler, Washington University in St. Louis**Title:** How intraspecific variation in metabolism and hypoxia tolerance relates to brain size in Brevimyrus niger**Advisor(s):** Bruce Carlson**P-01-14****Presenter:** David Gao, University of Chicago**Title:** Enhancement of neural stem cell mediated anti-glioma therapy via hypoxic culture**Advisor(s):** Dou Yu**P-01-15****Presenter:** Jacob Gray, Beloit College**Title:** Neuron survival and maintenance: Building a model to test IGF-1 signaling and trafficking**Advisor(s):** Rachel A. Bergstrom**P-01-16****Presenter:** Laura Guderyon, Carthage College**Title:** Crushing grip and pinch strength amongst men’s NCAA Division III tennis and baseball athletes**Advisor(s):** Justin Miller, Paul Martino**P-01-17****Presenter:** Yue Guo, Washington University in St. Louis**Title:** Age differences in accuracy of perceiving emotion regulation strategies and relationship satisfaction**Advisor(s):** Tammy English**P-01-18****Presenter:** Brett Hahn, Macalester College**Title:** Relationship Between Adenosine Signaling & Host Microbiome**Advisor(s):** Martin J. Blaser**P-01-19****Presenter:** Alexis Hahn, Carthage College**Title:** Crushing grip and pinch strength amongst men’s NCAA Division III tennis and baseball athletes**Advisor(s):** Justin Miller, Paul Martino**P-01-20****Presenter:** Janet Haro, Carthage College**Title:** Genetic Engineering of a Lead Biosensor**Advisor(s):** Janice Pellino**P-01-21****Presenter:** Gregory Harrison, Washington University in St. Louis**Title:** The Plant Hormone Auxin Promotes Pseudomonas syringae DC3000 Pathogenesis in Arabidopsis**Advisor(s):** Barbara N. Kunkel**P-01-22****Presenter:** Charles Heller, St. Olaf College**Title:** Characterization of phototactic behavior in hatchling snapping turtles (Chelydra serpentina)**Advisor(s):** Jay Demas**P-01-23****Presenter:** Shannon Henry, Knox College**Title:** Effects of Ethanol on Macrophage Cell Surface Morphology**Advisor(s):** Janet Kirkley, Linda Dybas**P-01-24****Presenter:** Lauren Kennington, Hope College**Title:** Mutation of Putative Neddylation Site in VACM-1/Cul 5 Attenuates its Effect on Proliferation and MAPK Phosphorylation.**Advisor(s):** Maria Burnatowska-Hledin**P-01-25****Presenter:** Danielle Klunk, Gustavus Adolphus College**Title:** Relationship between Injury Severity and Outcome in Adults with Traumatic Brain Injury (TBI) Receiving Post-Acute Rehabilitation**Advisor(s):** Thomas Bergquist**P-01-26****Presenter:** Samantha Knott, Lawrence University**Title:** Transcriptional regulation of prsA2, encoding a secretion chaperone in Listeria monocytogenes**Advisor(s):** Nancy Freitag**P-01-27****Presenter:** Bryan Ko, Washington University in St. Louis**Title:** Building a synthetic anaerobic methanotroph to understand anaerobic methane oxidation**Advisor(s):** Arpita Bose**P-01-28****Presenter:** Veronika Kondev, University of Chicago**Title:** Effect of phosphorylation of specific AMPA receptor subunit residues and the expression of sensitization**Advisor(s):** Paul Vezina**P-01-29****Presenter:** Laura Krings, Carthage College**Title:** Characterization of the Polysaccharide Associated Protein (PSAP) from Botryococcus braunii into Chlamydomonas reinhardtii**Advisor(s):** Timothy Devarenne**P-01-30****Presenter:** Ryan Lach, Colorado College**Title:** Influence of Bifidobacterium infantis on the Development of Anxiety, Depression, and Stress in Adolescent Rats**Advisor(s):** Lori Driscoll**P-01-31****Presenter:** Maile Leathem-Rietz, Grinnell College**Title:** CAFO in Poweshiek County, Iowa is a reservoir for carbenicillin resistance genes.**Advisor(s):** Shannon Hinsa-Leasure**P-01-32****Presenter:** Hark Joon Lee, Washington University in St. Louis**Title:** Investigating the Function of a Novel Mycobacterial Replication Protein**Advisor(s):** Christina Stallings**P-01-33****Presenter:** Sieun Lee, Hope College**Title:** Structure-function properties of VACM-1/Cul5 and the regulation of cellular growth and angiogenesis**Advisor(s):** Maria Burnatowska-Hledin**P-01-34****Presenter:** Xuan Li, Washington University in St. Louis**Title:** Exploring IAM to IAA conversion in Arabidopsis thaliana**Advisor(s):** Lucia Strader**P-01-35****Presenter:** Charles Liggett, St. Olaf College**Title:** Bacteriological Analysis of Palar Stream, Dindigul District, Tamil Nadu, India**Advisor(s):** Anne Walter**P-01-36****Presenter:** Jenny Liu, Washington University in St. Louis**Title:** N170 modulation due to affective interference and working memory load**Advisor(s):** Linda Larson-Prior**P-01-37****Presenter:** Tomaz Manzoni, St. Olaf College**Title:** Modeling Interactions Between APOBEC3G and HIV Vif polymorphisms in vivo**Advisor(s):** Susan Ross**P-01-38****Presenter:** Charles Martin, Lawrence University**Title:** Functionalizing [1,2,4]triazolo[4-3a]pyrazines as potential anti-malarial compounds**Advisor(s):** Stefan Debbert**P-01-39****Presenter:** Rita McCall, Grinnell College**Title:** Atp22p interacts with Atp6/8 DNA in Saccharomyces cerevisiae**Advisor(s):** Alex Tzagoloff**P-01-40****Presenter:** Beau McGinley, Washington University in St. Louis**Title:** Bioinformatic Analyses of Closely Related Strains of Rhodovulum**Advisor(s):** Arpita Bose |  |  |
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| **Poster Session II**Saturday, November 71:30 p.m.-2:45 p.m.Atrium**P-02-01****Presenter:** Queenster Nartey, Grinnell College**Title:** The Antimicrobial Effects of Copper-Alloys on High Touch Surfaces in Hospital Settings**Advisor(s):** Shannon Hinsa-Leasure**P-02-02****Presenter:** Reina Nielsen, Gustavus Adolphus College**Title:** Lichen coverage and morphology on different aged basaltic lava flows**Advisor(s):** Christine Parent**P-02-03****Presenter:** Halie Ostberg, Gustavus Adolphus College**Title:** Reproductive senescence negatively affects early egg development and embryonic viability in Drosophila**Advisor(s):** Margaret C. Bloch-Qazi**P-02-04****Presenter:** Lydia Pagel, Hope College**Title:** Incidence of infection of Wolbachia bacteria in Botanophila flies**Advisor(s):** Thomas Bultman**P-02-05****Presenter:** Log Park, Macalester College**Title:** Determining a More Efficient Fluorescent Protein for GPCR-Based Biosensor**Advisor(s):** Pamela Peralta-Yahya**P-02-06****Presenter:** Hunter Patterson, Washington University in St. Louis**Title:** Constructing and exploring recall networks: what graph theory can tell us about narrative recall**Advisor(s):** Jonathan Peelle**P-02-07****Presenter:** Phuong Pham, Macalester College**Title:** Coordinated functions of nonmuscle myosin II and membrane-remodeling proteins in Clathrin-mediated endocytosis**Advisor(s):** Indra Chandrasekar**P-02-08****Presenter:** Dung Pham, Macalester College**Title:** Neural Changes Associated with Successful Antidepressant Treatment in Adolescents with Major Depressive Disorder**Advisor(s):** Kathryn Cullen**P-02-09****Presenter:** Tiffany Phan, Colorado College**Title:** Identifying functionally redundant E3 ubiquitin ligase pairs in C. elegans by RNAi knockout**Advisor(s):** Nancy Huang**P-02-10****Presenter:** Thomas Pranzatelli, Washington University in St. Louis**Title:** Investigating the Evolution of Gene Structure in D. biarmipes**Advisor(s):** Sarah C. R. Elgin**P-02-11****Presenter:** Harrison Pravder, Washington University in St. Louis**Title:** Pif1A is required for actin cone movement during spermatid individualization in Drosophila**Advisor(s):** Kathryn Miller**P-02-12****Presenter:** Ruth Riedl, Grinnell College**Title:** The biomass of the gut microbiota significantly contributes to total resting metabolic rate**Advisor(s):** Justin Grobe, John Kirby**P-02-13****Presenter:** Lauren Roelike, St. Olaf College**Title:** Cellular mechanism for the prevention of lipotoxicity**Advisor(s):** Laura Listenberger**P-02-14****Presenter:** Eva Roesel, Carthage College**Title:** comparing crushing and pinching strength between male lacrosse and soccer players**Advisor(s):** Paul Martino**P-02-15****Presenter:** Lilianne Rothschild, Gustavus Adolphus College**Title:** Mood & Anxiety in Concussion & mTBI: A Systematic Review**Advisor(s):** Arthur Maerlender**P-02-16****Presenter:** Corey Ruder, St. Olaf College**Title:** Lakeshed land use: exploring the biogeochemical implications of excess nutrients**Advisor(s):** Charles Umbanhowar**P-02-17****Presenter:** Jordan Rudman, Colorado College**Title:** Examining spatial and environmental risk factors for non-tuberculosis mycobacterial lung disease, a GIS approach**Advisor(s):** Michael Strong**P-02-18****Presenter:** Jiyeon Ryoo, Washington University in St. Louis**Title:** Emotions in Conflicts of Sexism**Advisor(s):** Tammy English**P-02-19****Presenter:** Alia Sajani, Grinnell College**Title:** Characterization of TCR mediated down-regulation of CXCR4 surface expression**Advisor(s):** Karen Hedin**P-02-20****Presenter:** Martin Salazar, Knox College**Title:** Effects of Ethanol on Macrophage Cell Surface Morphology**Advisor(s):** Janet Kirkley, Linda Dybas**P-02-21****Presenter:** Kevin Saulnier, St. Olaf College**Title:** The impact of a memory aid on pattern learning in children**Advisor(s):** Patricia Reeder**P-02-22****Presenter:** Christina Schicker, Carthage College**Title:** comparing crushing and pinching strength between male lacrosse and soccer players**Advisor(s):** Paul Martino**P-02-23****Presenter:** Perrin Schupbach, Carthage College**Title:** Genetic Engineering of a Lead Biosensor**Advisor(s):** Janice Pellino**P-02-24****Presenter:** Brianna Silver, Colorado College**Title:** An investigation in the evolution of sexual dimorphism and communication in the brown ghost knifefish**Advisor(s):** Adam R. Smith and G. Troy Smith**P-02-25****Presenter:** Loraina Stinson, Lawrence University**Title:** Preliminary Assessment of DAF-19-Related Behavioral Defects**Advisor(s):** Elizabeth A. De Stasio**P-02-26****Presenter:** Ellen Sutter, St. Olaf College**Title:** Identification and characterization of intrinsically photosensitive retinal ganglion cells in common snapping turtles (Chelydra serpentina)**Advisor(s):** Jay Demas**P-02-27****Presenter:** Kali Thibault, Lawrence University**Title:** Avoid the amyloid? Elucidating the effects of prions on yeast during the fermentation process**Advisor(s):** David Hall**P-02-28****Presenter:** Emma Thornton-Kolbe, Knox College**Title:** Electroretinogram phenotypes of Drosophila melanogaster mutants**Advisor(s):** Ilya Vilinsky and Elke Buschbeck**P-02-29****Presenter:** Taylor Tibbs, Carthage College**Title:** Determining the unique molecular structure of the minimal HDV-like ribozyme drz-Mtgn-1**Advisor(s):** Barbara Golden**P-02-30****Presenter:** Stratton Tolmie, University of Chicago**Title:** A Cellular and Genetic Investigation of Regeneration in the Cnidarian Model, Clytia hemisphaerica**Advisor(s):** Jocelyn Malamy**P-02-31****Presenter:** Julia Tomasson, University of Chicago**Title:** Anti-diabetic drug metformin decreases autophagy and increases apoptosis in multiple myeloma**Advisor(s):** Claire Edwards**P-02-32****Presenter:** Alberto Torres, Beloit College**Title:** Exploring the Role of FPGS in Interactions Between Arabidopsis thaliana and Pathogens**Advisor(s):** Amy G. Briggs**P-02-33****Presenter:** Roman Tyshynsky, St. Olaf College**Title:** A comparison of free-field and headphone based sound localization using SoloArc**Advisor(s):** Jeremy Loebach**P-02-34****Presenter:** Natalie Vela, Hope College**Title:** Investigating the processing of Mga2p and Spt23p and their regulation of *OLE1* expression by unsaturated fatty acids in *Saccharomyces cerevisiae***Advisor(s):** Virginia McDonough**P-02-35****Presenter:** Kirstin Vogel, Colorado College**Title:** Identifying and determining roles of functionally redundant E3 ubiquitin ligases in embryogenesis in C. elegans**Advisor(s):** Nancy Huang**P-02-36****Presenter:** Jacob Westerberg, St. Olaf College**Title:** A comparison of free-field and headphone based sound localization using SoloArc**Advisor(s):** Jeremy Loebach**P-02-37****Presenter:** Carter Wolff, Hope College**Title:** Assessing the Role of Endophytic Fungi in Elymus canadensis**Advisor(s):** Thomas L. Bultman |  |  |
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ORAL SESSIONS

**Oral Session I**

Saturday, November 7

8:00-9:30 am

Connor Auditorium

Moderator: Elena Tonc

**O-01-01**

**Presenter:** Banni Lopez Zavala, Carthage College
**Title:** Bugs and Drugs: The Bioacculmulation and Biomagnification of Triclosan Using Macroinvertebrates
**Advisor(s):** Sarah Rubinfeld

**O-01-02**

**Presenter:** Mahmoud AbuEid, Gustavus Adolphus College
**Title:** Cleft Lip and Palate care in the middle east
**Advisor(s):** John A. van Aalst,

**O-01-03**

**Presenter:** Anthony Massaro, Gustavus Adolphus College
**Title:** Reproductive strategies of American Bison (Bison bison) bulls: a game theoretical analysis
**Advisor(s):** Jon Grinnell

**O-01-04**

**Presenter:** Maya Agata and Clara Friedman, Macalester College
**Title:** Species richness, diversity, and impact of life history strategies on distribution of freshwater mussels
**Advisor(s):** Daniel Hornbach

**Oral Session II**

Saturday, November 7

8:00-9:30 am

Holden Auditorium

Moderator: Kim Sukhum

**O-02-01**

**Presenter:** Ricardo Tenente, Colorado College
**Title:** Liquid imaging live, competent Acinetobacter baylyi with Atomic Force Microscope
**Advisor(s):** Phoebe Lostroh and Kristine Lang

**O-02-02**

**Presenter:** Thomas Auen, Grinnell College
**Title:** The Metabolic Consequences of Antisense Oligonucleotide-Mediated Knockdown of Mpzl3 In Vivo
**Advisor(s):** Traci Czyzyk

**O-02-03**

**Presenter:** Matt Sorensen, Gustavus Adolphus College
**Title:** The preservation of DNA using magnetic ionic liquids
**Advisor(s):** Jared L. Anderson

**O-02-04**

**Presenter:** Nicole Ladd, Hope College
**Title:** Interrogating the Role of xCT in Neuroregeneration through Laser Ablation of Zebrafish Neurons
**Advisor(s):** Brent P. Krueger

**Oral Session III**

Saturday, November 7

2:45-4:15 pm

Connor Auditorium

Moderator: Gretchen Walljasper

**O-03-01**

**Presenter:** Jonathan Melms, Macalester College
**Title:** Anti-inflammatory effects of turmeric
**Advisor(s):** Eric Wiertelak

**O-03-02**

**Presenter:** Oleksandr Dmytrenko, St. Olaf College
**Title:** Effect of human antibody IgM12 on cardiac differentiation of human induced pluripotent stem cells
**Advisor(s):** Timothy Nelson

**O-03-03**

**Presenter:** Jefferine Li, University of Chicago
**Title:** TSC2 reconstitution suggests a lymphatic endothelial origin for angiomyolipoma
**Advisor(s):** Lucia Schuger

**Oral Session IV**

Saturday, November 7

2:45-4:15 pm

Holden Auditorium

Moderator: Vivian Lee

**O-04-01**

**Presenter:** Gustavo Pacheco, University of Chicago
**Title:** TSC2 reconstitution suggests a lymphatic endothelial origin for angiomyolipoma
**Advisor(s):** Lucia Schuger

**O-04-02**

**Presenter:** Aditya Rao, University of Chicago
**Title:** The transcription factor LEF1 promotes intrathymic expansion and Th2-type effector differentiation in iNKT cells
**Advisor(s):** Barbara Kee

**O-04-03**

**Presenter:** Eric Dai, Washington University in St. Louis
**Title:** Stat3 promotes actin polymerization during zebrafish development
**Advisor(s):** Lila Solnica-Krezel

**O-04-04**

**Presenter:** Alan Lu, Washington University in St. Louis
**Title:** Localization of Proteins to the Outer Lateral Domain
**Advisor(s):** Lucia Strader