

**POSTER SESSION I**  
**SATURDAY, NOVEMBER 3<sup>RD</sup>**  
**9:30-11:00 AM**  
**ATRIUM**

**P-01-01**

Regulation of FcεRI Expression on Human Neutrophils by IgE Antibody  
Uyen Tran, Biology, Beloit College  
Advisor: Marion Fass, Beloit College

**P-01-02**

Using chromatin immunoprecipitation to measure F-box protein Dia2 binding to the rDNA locus in *Saccharomyces cerevisiae*  
Allie Wagner, Department of Genetics, Cell Biology and Development, St. Olaf College  
Advisor(s): Dr. Deanna Koeppe, University of Minnesota

**P-01-03**

THE EFFECTS OF PERIODONTAL DISEASE ON OVERALL HEALTH  
Elise Marquie, Biology/Chemistry, Beloit College  
Advisor(s): Kathleen Mandell, Beloit College  
Co-Author(s): Winter, John

**P-01-04**

Localization of Antigen in Differentially Loaded Dendritic Cells  
Jason Tse, Biochemistry, Beloit College  
Advisor(s): Marion Fass, Beloit College  
Co-Author(s): Vujanovic, Lazar; Watkins, Simon; Butterfield, Lisa H.

**P-01-05**

Regulation of CD8 T cell response by interferon-gamma using DNA vaccination and Cytopathic viral infection  
Andrew Scarano, Pathobiological Sciences, Beloit College  
Advisor(s): Professor M. Suresh, University of Wisconsin, Madison  
Co-Author(s): Plisch, Erin; Suresh, M

**P-01-06**

Role of microRNA 196b Expression in MLL Associated Leukemias  
Kate Eaton, Biology, Beloit College  
Advisor(s): Marion Fass, Beloit College

**P-01-07**

Investigating Obesity Through Gene Function  
Sonia Laurie & Caroline Leitschuh, Biology, Beloit College  
Advisor(s): Brett Woods, Beloit College  
Co-Author(s): Leitschuh, Caroline

**P-01-08**

The Design of a DNA Nanowire Switched by Integration Host Factor

Daniel Murphy, Biochemistry, Beloit College

Advisor(s): Kathleen Mandell, Beloit College

**P-01-09**

A Genetic Screen to Identify, Isolate, and Analyze *hilA*-XO4 Gain-of-Function Mutants.

Sara Roggensack, Biology, Colorado College

Advisor(s): Phoebe Lostroh, Colorado College

Co-Author(s): Lostroh, Phoebe; Higgins, Andrew; Puhr, Sarah

**P-01-10**

Cloning Thermophilic Cellulases.

Jenna Pickhardt, Biology, Carthage College

Advisor(s): Dr. Patrick Pfaffle, Carthage College

**P-01-11**

VACM-1/*cul5* Function is Regulated by its Posttranslational Modification Status.

Shirley Bradley, Chemistry, Hope College

Advisor(s): Dr. Maria Burnatowska-Hledin, Hope College

Co-Author(s): Oosterhouse, Elisabeth

**P-01-12**

Role of MGA2 in regulation of lipid metabolism in *Saccharomyces cerevisiae*.

Caitlin Rice, Biology, Hope College

Advisor(s): Dr. Virginia McDonough, Hope College

Co-Author(s): Stuke, Joseph, McDonough, Virginia A

**P-01-13**

Elucidation of transcriptional regulatory sites involved in the heat shock response of *Cryptosporidium hominis*.

Benjamin Cohn, Microbiology and Immunology, Grinnell College

Advisor(s): Greg Buck, Virginia Commonwealth University

Co-Author(s): Cohn, Benjamin; Manque, Patricio A; Serrano, Myrna G; Lara, Ana M; Sheth, Nihar; Buck, Gregory A

**P-01-14**

Identifying Binding Sites of Transcription Factors in *Giardia lamblia*

Nate Bowerman & Brenna Lamphear, Biology, Hope College

Advisor(s): Dr. Aaron Best, Hope College

Co-Author(s): Bowerman, Nate

**P-01-15**

Semaphorin Protein Expression in Mouse Thymus

Udochukwu Obodo, Biology, Macalester College

Advisor(s): Devavani Chatterjea, Macalester College

Co-Author(s): Chuntova, Polly. Aanonsen, L. Chatterjea, D.

**P-01-16**

Analysis of the relationship between bacterial uptake by M cells and development of the Gut Associated Lymphoid Tissue

Aarti Chawla, Biochemistry, Beloit College

Advisor(s): Kathleen Mandell, Beloit College

Co-Author(s): Knight, Katherine; Severson, Kari

**P-01-17**

Subcellular Localization of the Glutamate Dehydrogenase Isozymes in *S. cerevisiae* by Epitope Tagging

Matthew Pautz, Chemistry, Augustana College

Advisor(s): Dr. Pamela Trotter, Augustana College

**P-01-18**

Gene Expression of Immune Semaphorins and Their Receptors in the Adult Mouse Thymus

Grace Linder, Biology, Macalester College

Advisor(s): Dr. Devavani Chatterjea, Macalester College

Co-Author(s): Crider, Nate, Matthes, David, Chatterjea, Devavani

**P-01-19**

Respiration Observed Through Peas

Anacelia Saenz, Biology, Beloit College

Advisor(s): Yaffa Grossman, Beloit College

**P-01-20**

Selection and characterization of SAUR gene promoter lines

Ize Imai, Zainab Mansaray, Biology, Macalester College

Advisor(s): Paul J. Overvoorde, Macalester College

Co-Author(s): Spartz, Angela; Gray, Bill; Overvoorde, Paul.

**P-01-21**

Measured Conformational Change in the thiM Riboswitch Induced by Metabolite Binding

Paul Nichol, Chemistry, St. Olaf College

Advisor(s): Greg Muth, St. Olaf College

Co-Author(s): Muth, Greg; Schweinfus, Jeff

**P-01-22**

Histology at Carthage College

Jennifer Bickle, Biology, Carthage College

Advisor(s): Dan Choffnes, Carthage College

**P-01-23**

Effect of Nutritional Conditions on Localization of PDR16 and Identification of Glycerol Sensitivity Phenotypes

Rachel VanKempen, Biology, Hope College

Advisor(s): Virginia McDonough, Hope College

**P-01-24**

The Preparation of Functionalized Sol-gel Materials for Control of Cell Growth

Nikolas McPherson & Christina Lis, Chemistry, Hope College

Advisor(s): Dr. Elizabeth Sanford, Hope College

Co-Author(s): Lis, Christina ; Sanford, Elizabeth

**P-01-25**

Metabolic Enrichment Studies of the Glutamate Dehydrogenase Single Mutation Strains of *Saccharomyces cerevisiae*

M. Zak Rajputr, Biochemistry, Augustana College

Advisor(s): Dr. Pamela J. Trotter, Augustana College

**POSTER SESSION II**  
**SUNDAY, NOVEMBER 4<sup>TH</sup>**  
**10:00-11:30 AM**  
**ATRIUM**

**P-02-01**

The Effects of Repetitious Element 1360 on Heterochromatin Formation in *Drosophila* *Melanogaster*

Shachar Shimonovich, Biology, Washington University

Advisor(s): Dr. Sarah C.R. Elgin, Washington University

Co-Author(s): McDaniel, Stephen , Huisinga, Kate , Figueroa-Clarevega, Alejandra , Wu, Amy ,Dothager, Matthew , Wu, Albert , Elgin, Sarah C.R.

**P-02-02**

The Establishment of a robust system for infecting *Caenorhabditis elegans* with recombinant

*Salmonella typhimurium*

Nicole Laniohan & Grace Park, Biology, Colorado College

Advisor(s): Phoebe Lostroh, Colorado College

**P-02-03**

An investigation of genetic variation in longear sunfish (*Lepomis megalotis*) using Mitochondrial and microsatellite analyses

Julie Rolfes, Biology, St. Olaf College

Advisor(s): Jean Porterfield, St. Olaf College

Co-Author(s): Dave Gruner, Millie Eggebroten

**P-02-04**

Three-Part Class Comparison of Two Clonal *Haemophilus ducreyi* Populations

Robin Cutler, Biological Chemistry, Grinnell College

Advisor(s): Tricia Humphreys, Grinnell College

**P-02-05**

Abundance Correlation between Codon Usage and tRNA Expression in *Caulobacter Crescentus* (CB15)

Rachel Applefield, Biochemistry and Molecular Biology, University of Chicago

Advisor: Sean Crosson, University of Chicago

**P-02-06**

Hematological and Morphological Study of the LG/J and SM/J Mouse Strains, Preliminary to QTL Analysis

Stephen Tourjee, Biology, Washington University

Advisor(s): Dr. James M. Cheverud; Joseph P. Jarvis, Washington University

**P-02-07**

GENETIC VARIATION IN POCKETBOOK AND PIMPLEBACK MUSSEL  
POPULATIONS BORDERING THE ST. CROIX FALLS DAM

Suzy Szumowski, Biology, Macalester College

Advisor(s): Sarah Boyer, Macalester College

Co-Author(s): Boyer, Sarah L., Hornbach, Daniel J., Hove, Mark C.

**P-02-08**

Effects of prairie maturity and vegetation structure on small rodents in Minnesota prairies

Rebecca Ross, Biology, St. Olaf College

Advisor(s): Diane Angell, St. Olaf College

**P-02-09**

Analysis of Herbicide Influence on Local Aquatic Ecosystems.

James Walsh, Jessica Rhodes, and Bret VanDeWoestyne

Biology, Augustana College

Advisor(s): Kevin Geedey and Mary Ellen Biggin, Augustana College

**P-02-10**

The effect of environmental factors on the density of rainforest dwelling macropods

Heidi Jump, Biology, Beloit College

Advisor(s): Kathleen Mandell, Beloit College

Co-Author(s): Winter, John

**P-02-11**

Ecotypic Variation or Phenotypic Plasticity? Examining Allocation and Architecture of  
Wild Lupine Along Resource Gradients

Rose Heflin, Biology, Beloit College

Advisor(s): Don Waller - project advisor, University of Wisconsin; Pablo Toral – Major

Advisor, Beloit College

**P-02-12**

The Effects of Norgestrel on *Xenopus laevis*

Amber Vogelmann, Brittany McHale, Biology, Carthage College

Advisor(s): Dr. Choffnes, Carthage College

**P-02-13**

Connections from the Medial Prefrontal Cortex to the Amygdala in Rats

Christy Cloninger, Psychology, Grinnell College

Advisor(s): Nancy Rempel-Clower, Grinnell College

**P-02-14**

Lateralization of Visual Discrimination Abilities in Passerines & Non-Passerines

Rachel Wintheiser, Biology, Knox College

Advisor(s): Jennifer Templeton, Knox College

**P-02-15**

Retinoid-regulated Astroglialogenesis in Embryonic Hindbrain

Peter Reiss, Biochemistry, Beloit College

Advisor(s): Kathleen Mandell, Beloit College

Co-Author(s): Nancy Schwartz, Judith Henry, Leslie King, Miriam Domowicz

**P-02-16**

Adaptation to Acetate Carbon Source Upregulates the Mitochondrial Retrograde Signaling Pathway

Deidre Leist, Chemistry, Augustana College

Advisor(s): Dr. Pamela Trotter, Augustana College

**P-02-17**

Detection of four Virulence Determinants Class I and II of *Haemophilus ducreyi*

Nan Wang, Biology, Grinnell College

Advisor(s): Tricia Humphreys, Grinnell College

**P-02-18**

Purification and preliminary characterization of a bacterial chromosomal toxin-antitoxin pair

Kevin Dalton, Department of Biochemistry and Molecular Biology, University of Chicago

Advisor(s): Sean Crosson, University of Chicago

Co-Author(s): Fiebig, Aretha; Crosson, Sean

**P-02-19**

Alzheimer's Disease: Generation of Amyloid-beta

Michelle Mo, Biology, Washington University

Advisor(s): Dr. Gunnar Gouras, Washington University

**P-02-20**

Connections from the Amygdala to the Orbitofrontal Cortex in the Rat Brain

Katherine Ingram, Psychology, Grinnell College

Advisor(s): Professor Rempel-Clower, Grinnell College

**P-02-21**

Identification and Removal of Nuclear Localization Sequences in *Xenopus laevis*

Intersectin

Jamie Hadac, Biology, Knox College

Advisor(s): Judy Thorn, Hope College

**P-02-22**

The Genomics Education Partnership: Engaging Undergraduates in a Genomics Research Project

Professor Sarah Elgin, Biology, Washington University

Co-Authors: Shaffer, CD; Leung, W; Buhler, J; Mardis, E; Lopatto, D.

# **ORAL SESSION I**

SATURDAY, NOVEMBER 3<sup>RD</sup>

11:00-12:30 PM

CONNOR AUDITORIUM

MODERATOR: JEVON PLUNKETT, WASHINGTON UNIVERSITY

## **O-01-01**

Receptor-Mediated Activation of Rac Pathways in Viral Exacerbation of Asthma

Michael Schreiber, Chemistry, Lawrence University

Advisor(s): David Hall, Lawrence University

## **O-01-02**

Wild Type Foxd3 Expression in Cardiac Neural Crest and Cardiac Defects in Foxd3

Mutant Mice

Elise Pfaltzgraff, Biology, Lawrence University

Advisor(s): Nancy Wall, Lawrence University

Co-Author(s): Nelms, Brian (Phd, Vanderbilt University)

## **O-01-03**

Regulating Transcription of RNA with Surfactants and Cyclodextrins

Andrew Bartles, Biochemistry, Beloit College

Advisor(s): Kathleen Mandell, Beloit College

Co-Author(s): Dias, R.; Lindman, B

## **O-01-04**

Spectroscopic and Functional Studies of a Five-Coordinate Fe(II)-NO Adduct of the CO Sensing Heme Protein, CooA

Isabel Malone, Chemistry, Hope College

Advisor(s): Dr. Robert W. Clark, Hope College

Co-Author(s): LaRoche, Elise

## **O-01-05**

THE EFFECTS OF REPETITIOUS ELEMENT 1360 ON HETEROCHROMATIN FORMATION IN DROSOPHILA MELANOGASTER

Stephen McDaniel, Biology, Washington University

Advisor(s): Dr. Sarah Elgin, Washington University



## **ORAL SESSION II**

SATURDAY, NOVEMBER 3<sup>RD</sup>

11:00AM -12:30 PM

HOLDEN AUDITORIUM

MODERATOR: ALANA CONTI, WASHINGTON UNIVERSITY

### **O-02-01**

Polyphenols in Tea Inhibit Iron Absorption by Two Different Mechanisms

Marta Grabowski, Biology, Grinnell College

Advisor(s): Diane Roberston, Grinnell College

### **O-02-02**

Chemomorphological Effects of Chaoborus Kairomone on *Daphnia pulex*

Lydia Luy Tan, Biology, Lawrence University

Advisor(s): Jerrold Lokensgard, Lawrence College

Co-Author(s): De Stasio, Beth and Bart

### **O-02-03**

The Subcellular Localization of VACM-1 and NEDD8

Lida Dabney, Biology, Hope College

Advisor(s): Maria Hledin, Hope College

### **O-02-04**

The Impact of Human Structures on Behavior of *Agama agama* in Tarangire National Park, Tanzania

Caitlin Lill, Biology, Beloit College

Advisor(s): Kathleen Mandell, Beloit College

## **ORAL SESSION III**

SATURDAY, NOVEMBER 3<sup>RD</sup>

2:00-3:00 PM

CONNOR AUDITORIUM

MODERATOR: MATTHEW BADTKE, ST. LOUIS UNIVERSITY

### **O-03-01**

Finding Novel Peptide Families in Medicago

JenHao Cheng, Math & Computer Science, Macalester College

Advisor(s): Libby Shoop, Macalester College

### **O-03-02**

A Susceptibility Gene for Multiple Sclerosis?

Dafang Zhang, Biology, Washington University

Advisor: Dr. Simon Foote, Menzies Research Institute, Hobart, Tasmania, Australia

### **O-03-03**

THE ROLE OF FIBROBLAST GROWTH FACTOR RECEPTOR 3 SIGNALING IN  
MUCOPOLYSACCHARIDOSIS VII BONE DEFECTS.

Jason Metcalf, Biology, Hematology, Washington University

Advisor: Katherine P. Ponder, Washington University

Co-Author(s): Hilton, Matthew; Tittiger, Mindy; Ma, Xiucui; Long, Fanxin; Ponder, Katherine

### **O-03-04**

Mutational analysis of candidate genes for heritable cardiac disorders

Ian-James Malm

Mentor: Timothy M. Olson MD

Cardiovascular Genetics Laboratory, Mayo Clinic, Rochester, Minnesota

## **ORAL SESSION IV**

SATURDAY, NOVEMBER 3<sup>RD</sup>

2:00-3:00 PM

HOLDEN AUDITORIUM

MODERATOR: ALANA CONTI, WASHINGTON UNIVERSITY

### **O-04-01**

The Rusty Crayfish (*O. rusticus*) Impact on Lake Food Webs as Indicated by Zooplankton Size

John Walters, Biology, St. Olaf College

Advisor(s): Wes Pearson, St. Olaf College

Co-Author(s): Rusak, James; Schmitz, Jennifer

### **O-04-02**

Susceptibility of coastal populations of Caribbean pine to attack by southern pine beetle in Belize

Aaron Snyder, Biochemistry, Colorado College

Advisor(s): Nathan Bower, Colorado College

Co-Author(s): Snyder, Marc and Bower, Nathan

### **O-04-03**

Biodiversity of Human-Impacted Wetlands

Ashley LaFontaine, Biology, Carthage College

Advisor(s): Dr. Scott Hegrenes, Carthage College