

**Midstates Consortium for Math and Science
Undergraduate Research Symposium
Biological Sciences & Psychology
The University of Chicago
November 7 – 8, 2014**

Program Schedule

Friday, November 7	All Friday evening events are at the Holiday Inn Ballroom Holiday Inn Downtown Chicago – 506 W. Harrison St.
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5:30 – 6:30 pm	Registration
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6:30 – 7:30 pm	Dinner buffet
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7:15 – 7:30 pm	Greetings Victoria Prince and/or Elizabeth Grove The University of Chicago Brandy Russell, Director Midstates Consortium for Math and Science Gustavus Adolphus College
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7:30 – 8:00 pm	Keynote Lecture Cathryn Nagler, Bunning Food Allergy Professor University of Chicago Department of Pathology, Department of Medicine “How intestinal bacteria regulate allergic responses to food”
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8:00 – 9:00 pm	Janet Anderson Award Lecture Phoebe Lostroh, professor of Molecular Biology Colorado College 2014 Janet Andersen Award Winner in the Biological Sciences & Psychology “Nanomachines to the rescue! Surviving starvation in a bacterial world”
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Saturday, November 8 Gaylord and Dorothy Donnelley Biological Sciences Learning Center (BSLC)
924 E. 57th St, Chicago, IL 60637

7:30 – 7:45 am	Load bus & vans – depart at 7:45 am sharp for University of Chicago campus Groups with cars or vans will drive themselves; bus transportation is for everyone else. If not staying at the hotel Saturday night, please bring your luggage.	Meet in Holiday Inn lobby
8:00 – 8:45 am	Breakfast buffet Poster session 1 set-up	BSLC lobby BSLC mezzanine
8:45 – 10:00 am	Oral Presentations of Student Papers Session A: Behavior, Cognition, & the Brain Session B: Development & Regeneration	BSLC Room 109 Room 115
10:00 – 10:15 am	Group Picture	BSLC lobby
10:15 – 10:30 am	Break	
10:30 – 11:15 am	Oral Presentations, continued Session A: New Approaches Session B: Development & Regeneration, ctd.	Same rooms Room 109 Room 115
11:15 – 12:15 pm	Poster Presentations – Session 1	BSLC mezzanine
12:15 – 1:00 pm	Lunch buffet Poster session 2 set-up	BSLC lobby BSLC mezzanine
1:00 – 1:30 pm	Panel discussions Graduate School Information Session Careers at Liberal Arts Institutions	BSLC Room 109 Room 115
1:30 – 2:30 pm	Poster Presentations – Session 2	BSLC mezzanine
2:30 – 3:30 pm	Oral Presentations of Student Papers Session C: Infectious Agents & Immunology Session D: Ecology	BSLC Room 109 Room 115
3:30 – 3:45 pm	Break	
3:45 – 4:45 pm	Oral Presentation Sessions, continued Session C: Infectious Agents & Immunology, ctd. Session D: Advances in Cancer Biology	Same rooms Room 109 Room 115
4:45 – 5:00 pm	Concluding Remarks & Awards for Best Presentations Complete evaluations & pick up dinner to go	
5:15 pm	Bus leaves for Holiday Inn	

SESSION A – Saturday, 8:45am

Room: BSLC 109

# of Presenter	Presenter Name	College / University	Title of Presentation
A.1 (8:45)	Lisa Bonsignore-Opp	University of Chicago	Pre-weaning exposure to a novel strain is sufficient to induce strain familiarity in Long Evans rats.
A.2 (9:00)	Medha Biswas	University of Chicago	Nicotine-conditioned Place Preference in Embryonic Squid
A.3 (9:15)	Maimon Rose	University of Chicago	Preliminary evidence of working memory in middle temporal area
A.4 (9:30)	Xueer (Sherry) Yu	Washington University in St. Louis	The Effect of Relationship Satisfaction on One's Reaction to Relevant Pictorial Stimuli
A.5 (9:45)	Vincent Shieh	University of Chicago	Scalp EEG Seizure Detection via a Cross Covariance Function
Photo & BREAK 10:00 – 10:30 am			
A.6 (10:30)	Manar Mohammad & Richard Stauffer	Carthage College	Targeted nanodisks induced significant apoptosis in Mantle Cell Lymphoma cells
A.7 (10:45)	Lydia Pazienza	University of Chicago	RNA dynamics of the CRISPR-Cas9 Complex
A.8 (11:00)	Ben Johnson & Grace Wiesner	Hope College	Mission Monteverde: Mathematical Rainforest Modeling

SESSION B – Saturday, 8:45am

Room: BSLC 115

# of Presenter	Presenter Name	College / University	Title of Presentation
B.1 (8:45)	Eric Dai	Washington University in St. Louis	The role of dachsous2 in regulating planar cell polarity
B.2 (9:00)	Clara Kao	University of Chicago	Adaptation of actin cytoskeleton during suspended animation in zebrafish embryos
B.3 (9:15)	Swathi Krishnan	University of Chicago	The Role of Dysferlin and Annexin in Muscle Repair
B.4 (9:30)	Matthew Miller	Grinnell College	RNA-seq analysis of the tomato fruit: KNOTTED-like homeodomain genes' role in establishing gene expression gradients
B.5 (9:45)	Kory Kolis	Gustavus Adolphus College	Investigating genes involved in pre-zygotic genetic isolation between <i>S. cerevisiae</i> and <i>S. uvarum</i>
Photo & BREAK 10:00 – 10:30 am			
B.6 (10:30)	Nicole Ladd	Hope College	Exploring the Role of xCT in Neuroregeneration through Laser Ablation of Zebrafish Neurons
B.7 (10:45)	Emily Mesev	Grinnell College	Benoxacor Reduces Glutathione Reductase Activity in Cotton Cotyledons at Optimal and Chilling Temperatures
B.8 (11:00)	Olivia Martin	Knox College	Development of a high throughput assay to measure survival of Dictyostelium

SESSION C – Saturday, 2:30 pm

Room: BSLC 109

# of Presenter	Presenter Name	College / University	Title of Presentation
C.1 (2:30)	Anna Lampe	Luther College	Comparison of B cells and dendritic cells in promoting cytolytic CD4 T cell function
C.2 (2:45)	Aditya Rao	University of Chicago	Towards understanding the role of LEF1 in iNKT cell development
C.3 (3:00)	Flora Liu	Colorado College	Surface Protein Isolation of <i>Acinetobacter baylyi</i> in Relation to Natural Competence and Twitching Motility
C.4 (3:15)			
BREAK 3:30 – 3:45 pm			
C.5 (3:45)	Aarti Kolluri	Grinnell College	<i>Plasmodium falciparum</i> erythrocyte membrane protein 1 (PfEMP1) expression in malaria parasites infecting children by tandem mass spectrometry
C.6 (4:00)	Amrita Saha	Grinnell College	Effect of Heat Stress on Chromosome Loss Rate in Neocentromere Strains in <i>C. albicans</i>
C.7 (4:15)	Katherine Bultman	Lawrence University	Determining the Presence of a Protein:Protein Interaction between Angiogenin and Heat Shock Factor 1
C.8 (4:30)			

SESSION D – Saturday, 2:30 pm

Room: BSLC 115

# of Presenter	Presenter Name	College / University	Title of Presentation
D.1 (2:30)	Michaela Rice	Gustavus Adolphus College	What Makes a Happy Home? Understanding Western Burrowing Owl Habitat and Ecology
D.2 (2:45)	Rebecca Rasmussen	Grinnell College	Aggressive behavior and nestmate recognition in the supercolony-forming ant <i>Formica exsectoides</i>
D.3 (3:00)	Edward Hsieh	Grinnell College	Cuticular hydrocarbon profiles of supercolony forming ant, <i>Formica exsectoides</i>
D.4 (3:15)	Caroline Owens	University of Chicago	Nitrogen loads to Waquoit Bay, 1990-2013: have they changed?
BREAK 3:30 – 3:45 pm			
D.5 (3:45)	Wendy Bindeman	St. Olaf College	Investigating the use of targeted therapies for triple-negative breast cancer
D.6 (4:00)	Sara Kullberg	Gustavus Adolphus College	Alternative Splicing in Cancer Genetics
D.7 (4:15)	Shelby Roles	Gustavus Adolphus College	The use of bioinformatics in developing targeted therapies for high-risk leukemias
D.8 (4:30)	Donna Guo	University of Chicago	Development of a Reporter System to Study Cellular Plasticity in Gliomas

Poster Session 1. 11:15 am – 12:15 pm

Poster #	Name	College/University	Poster Title
1.01	April Apfelbaum	Beloit College	Some Isoforms of necessary for the Plant Immune Response
1.02	Jacob Parrott	Beloit College	Poly(ADP-Ribose) Polymerase (PARP) inhibition affects gene expression and is predicted to interact with MYB family TFs
1.03	Beth Klein & Ben Massat	Carthage College	Investigating the anomaly of mycobacteriophage Squid: a temperate phage that lacks an integrase
1.04	Laura Krings	Carthage College	Analysis of Bacteriophage λ Procapsids for use as Viral Nanoparticle for Early Cancer Detection and Targeted Drug Delivery
1.05	Brendan Davis & Leigh Nicholl	Colorado College	Stochastic Modeling of Quorum Sensing in Gram Negative Bacteria
1.06	Colleen Leong	Colorado College	Type IV Pilus Proteins of Acinetobacter Baylyi: Measuring Competence Quantitatively with Puddle Transformation
1.07	Jordyn Watts	Colorado College	Effects of brief postnatal PBDE exposure on GABAA receptor function in the rat
1.08	Petra Jans	Colorado College	The Role of Xanthine Oxidoreductase in Tumor Associated Macrophage Activation in Breast Cancer
1.09	Daniela Jaime & Michael Riegsecker	Grinnell College	The Behavioral Effects of a High Fat Diet on Radial Arm Maze Performance
1.10	Joanna Silverman	Grinnell College	Hematologic expression patterns of RIP140 in critically ill patients
1.11	Kendyl Greimann	Gustavus Adolphus College	Amyloid Beta Postsynaptic Signaling through Anchored Calcineurin
1.12	Monica Johnson	Gustavus Adolphus College	Identification of a second region regulating nuclear localization of the circadian clock protein mouse Cryptochrome 1
1.13	Gloria Chang, Andrew Neevel, & Wessel van den Bergh	Hope College	Discovery and functional investigation of cytotoxic mycobacteriophage genes
1.14	Christopher Acy	Lawrence University	Tolerance of the Invasive New Zealand Mud Snail (<i>Potamopyrgus antipodarum</i>) to Decontamination Procedures

Poster #	Name	College/University	Poster Title
1.15	Nutt Punnaitinont	Lawrence University	Two key enzymes interaction in <i>Aspergillus fumigatus</i>
1.16	Sarah Gunby	Lawrence University	Searching for an interaction between R-loops and angiogenin using chromatin immunoprecipitation
1.17	Taylor Bachaus	Lawrence University	Elucidating Connections Between Autophagy, Reactive Oxygen Species, and Anticancer Organocobalt Compounds
1.18	Jamison Ash, Grant Goss, Thomas Tourdot	Luther College	PI3K/Akt/DAF-16 Activity is Protective During Excess Iron Exposure in <i>C. elegans</i>
1.19	Zoe Bachman	Luther College	Non-native, invasive <i>Rhamnus cathartica</i> and its relationship with native understory plant species in oak-hickory forests
1.20	Jake Westerberg	St. Olaf College	Modulation of neural synchrony in prefrontal and parietal cortex of monkeys as a function of executive processing demand in a context processing task
1.21	Michele Severson	St. Olaf College	Influence of Visual Cues on Head Direction (HD) Cell Firing Following Anesthesia
1.22	Benjamin Trnka	University of Chicago	Acute Effects of Alcohol and Ecstasy on Outcome Expectancies of Risky Sexual Events
1.23	Emily Wolfson	University of Chicago	STING pathway expression and IFN- β production in tumor cells
1.24	Marcus Marable	University of Chicago	The affects Low levels of Ionizing Radiation on later Irradiations
1.25	Jennifer Uehling	University of Chicago	Effects of climate warming on littoral zone submerged macrophyte communities
1.26	Garrett W Arosemena Ott	Washington University in St. Louis	the Musical Brain: an fMRI Study of Neuronal Activation through Music
1.27	Greg Harrison	Washington University in St. Louis	Characterization of the novel JA signaling component <i>JASMONATE HYPERSENSITIVE 3</i> in <i>Arabidopsis thaliana</i>
1.28	Joanna Luo	Washington University in St. Louis	Mapping critical interaction domains in phospholipase D3

Poster Session 2. 1:30 – 2:30 pm

Poster #	Name	College/University	Poster Title
2.01	Dillon McCannon	Beloit College	External quantitative parameters of obesity are not related to glucose to insulin ratios in horses
2.02	Megan Young	Beloit College	A Method to Study Cooperative Binding of Oxygen to Purified Hemoglobin Protein
2.03	Josh Brandt & Laura Krings	Carthage College	Comparison of Wisconsin Bat Species Activity Levels in the Post-Dusk and Pre-Dawn Time Periods
2.04	Tiffany Burton & Daniel Setzke	Carthage College	Development of a Solid Surface Lead Biosensor
2.05	Caroline Boyd	Colorado College	Morphological Changes of <i>Acinetobacter baylyi</i> Over a Growth Curve
2.06	Courtney Tyus	Colorado College	The role of RNA-binding protein SUP-26 in dendrite morphogenesis in <i>C. elegans</i>
2.07	Marley Jamason	Colorado College	Drought stress response in serpentine and non-serpentine populations of <i>Clarkia Gracilis</i>
2.08	Emily Twedell	Grinnell College	Neural Connections from the Orbital Prefrontal Cortex to the Extended Amygdala
2.09	Kate Schulze	Gustavus Adolphus College	Interneuron vulnerability in aged monkeys with memory impairment
2.10	Kris Reiser	Gustavus Adolphus College	Dragonfly larvae as bioindicators of MeHg in the St. Louis River watershed 2012-2014
2.11	Andrew Gomez-Seoane & Eric Hederstedt	Hope College	Long term trends in size distribution of Eastern hemlocks in West Michigan dune forests
2.12	Matt Ochs	Hope College	Differential regulatory response for the $\Delta 9$ desaturase in <i>Saccharomyces cerevisiae</i> based on fatty acid species and membrane-altering conditions.
2.13	Konstantinos Vlachos	Lawrence University	A Real Heart Breaker: The Conserved Effects of <i>xvg1</i> , a TGF β -related gene, on the Embryonic Development of Vertebrates
2.14	Samantha Knott	Lawrence University	Exploration of Angiogenin RNA Targets

Poster #	Name	College/University	Poster Title
2.15	Sarah Prophet	Lawrence University	Identification of the Small Heat Shock Protein Family Interactome in HEK293 Cells
2.16	Claire Dembsky	Luther College	The Effect of Floral Resource Diversity on Bee Diversity in Tallgrass Prairies
2.17	Jenna Johnson	Luther College	Histone modifications are required for the persistence of hydrogen sulfide memory in <i>Caenorhabditis elegans</i>
2.18	Jackie Tanis	St. Olaf College	Automated Analysis of Fluorescence Images: Where One Cell Ends and Another Begins
2.19	Leah Plasek	St. Olaf College	Cellular Mechanisms for Prevention of Lipotoxicity
2.20	Sonja Helgeson	St. Olaf College	Changes in tree growth patterns and species composition over 23 years in a maple-basswood forest restoration
2.21	Daniel Eaton	University of Chicago	Proteolytic Regulation of Holdfast Formation in <i>Caulobacter crescentus</i>
2.22	Mara Farcasanu	University of Chicago	Developing Toxin-Specific Therapeutic Agents against Anthrax Edema Factor
2.23	Sarah Kurtis	University of Chicago	Genetics and Evolution of Avian Plumage Color Polymorphisms
2.24	Timothy Salazar	University of Chicago	Sublethal effects of Deltamethrin on <i>Apis mellifera</i> in Turkey
2.25	Abhishek Saxena	Washington University in St. Louis	Effects of Mood on Processing of Affective Stimuli
2.26	Harkjoon Lee	Washington University in St. Louis	Examining Multi-Level Category Learning: Can learning of lower-order categories enhance overall learning?
2.27	Megan Freiler	Washington University in St. Louis	Energetic costs and reduced hypoxia tolerance from large brain size evolution in mormyrids