

## MISSISSIPPI UNIVERSITIES TAKE NEAR-SWEEP OF STUDENT AWARDS AT MCBIOS

MidSouth Computational Biology and Bioinformatics Society (MCBIOS) annual meeting was held in at Arkansas State University on February 18-19 with a record attendance of over 200 scientists. Attendees came from fifteen states stretching from Texas and South Dakota to Tennessee and Kentucky. Dr. Andy Perkins of Mississippi State served as Poster Chair and managed the setup and judging of over 100 posters. Dr. Dawn Wilkins of Ole Miss, MCBIOS Past President, managed judging of twenty-five student oral presentations. Dr. Susan Bridges of Mississippi State was elected President-Elect for the coming year. Awards were presented for the top three student talks, three best posters based on Biological Merit and three best posters based on Computational Merit. All of the presentation winners were from Mississippi universities and four of the six poster awards went to Mississippi students.

### Oral Presentation Award Winners from Mississippi Universities



In the oral presentation category, the first place winner was Heidi Pagan, a Ph.D. student in Biochemistry at Mississippi State University working under the direction of Dr. David Ray. The title of her talk was "Lineage Specific Activity from Novel Piggyac Elements and Evidence of Horizontal Transfer in Mouse Lemurs (*Microcebus*)."

Heidi's research focuses on transposable elements, which are repetitive DNA sequences whose presence and movement within a host genome can introduce genetic variation. The recent activity and horizontal transfer found in mouse lemurs is of interest for understanding the role of transposable elements in mammalian evolution, and may also aid in increasing their efficiency in gene therapy applications.

The second place oral presentation award winner was Juliet Tang, a Ph.D. student in the Department of Forest Products at Mississippi State University. The title of her talk was "Assembling A Novel Fungal Genome from Short Read Sequencing Data." Juliet is sequencing the genome of a copper-tolerant brown rot fungus. She hopes to describe as many genes as possible so that we can better understand how the fungus aggressively breaks down cellulose to sugar and how the fungus can survive the high levels of copper found on pressure-treated lumber. Her work has potential applications for the production of bioethanol from woody biomass and for wood preservative development. Her major professor is Dr. Susan Diehl.





Aleksandra Markovets of Mississippi Valley State University won the third place oral presentation award. She is a Master's student in the Department of Natural Sciences and Environmental Health at MVSU working under the direction of Dr. Abigail Newsome and Dr. Charles Bland. The title of her talk was "Promoter prediction in *Halothiobacillus Neapolitanus* C2 based on stress-induced DNA duplex destabilization." She is investigating methods to identify the signals in the genome that determine if genes important for carbon dioxide sequestration by bacteria are turned on or off. This information will help enhance our understanding of the carbon fixation process and may help to build new technologies that will decrease the carbon dioxide concentration in atmosphere.

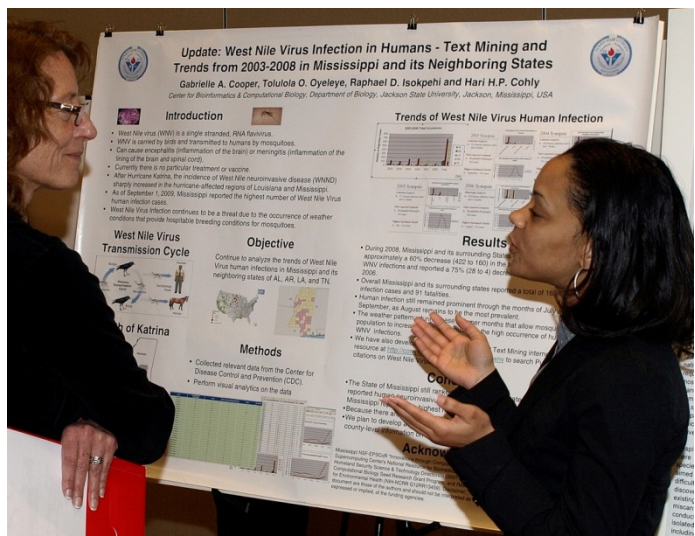
**Poster Award Winners from Mississippi Universities  
Biological Merit**

The first place poster award winner for Biological Merit was Neal Platt, a Ph.D. student in the Department of Biochemistry and Molecular Biology at Mississippi State University working under the direction of Dr. David Ray. The title of Neal's poster was "Recognition, Categorization, and

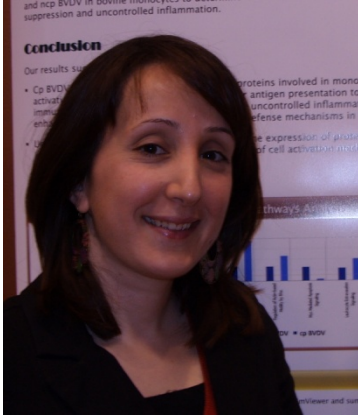


Characterization of Transposable Elements in a Non-murine Rodent: *Spermophilus Tridecemlineatus*. Neal's research investigates the dynamics of transposable element mobilization in a squirrel genome. In rodents, very little is known about these elements in species other than rat and mouse and even less is known about the potential role of transposable elements in generating diversity. Neal is from White Oak, TX. He received his BS in Biology from Abilene Christian University and his MS in Biology from Texas Tech University.

Gabrielle Cooper, an undergraduate student in the Department of Biology at Jackson State University, won the second place poster award for biological merit. Gabrielle's poster was entitled "West Nile Virus Infection in Humans: Trends from 2003-2008 in Mississippi and its Neighboring States." Her major professor is Dr. Raphael Isokpehi. The purpose of her work was to analyze the trends of the number of human infections in



Mississippi and its neighboring states of Alabama, Arkansas, Louisiana and Tennessee.



The third place winner for biological merit was Mais Ammari of Mississippi State University. She is a Ph.D. student in the Department of Basic Sciences in the College of Veterinary Medicine and her major professor is Dr. Lesya Pinchuk. The title of her poster was “Computational Analysis of Bovine Viral Diarrhea Virus Infected Monocytes: Identification of Cytopathic and Non-Cytopathic Strain Differences.” Bovine Viral Diarrhea Virus (BVDV) infection is widespread in cattle worldwide causing important economic losses. Mais and Dr. Pinchuk used a proteomics approach to assess differences in effects on the immune responses of infected hosts by two viral strains that cause acute and persistent infection.

### Computational Merit

The first place award for computational merit went to Vijender Chaitankar of the University of Southern Mississippi. He is a Ph.D. student in School of Computing. Dr. Chaoyang Zhang is his advisor and he is being co-advised by Dr. Preetam Ghosh. The title of his poster was “Transcriptional time lagged information approach to improving the accuracy of gene regulatory network reconstruction”. Vijender is developing algorithms that learn models of how some genes regulate the actions of other genes (gene regulatory networks). He has developed an improved information theoretic algorithm for inferring these models. His new method addresses problems related to dealing with large numbers of genes by using the concept of time lag. The major aim is to improve the accuracy of the inference algorithm.



The second place winner for computational merit was Lakshmi Pillai of Mississippi State University. She is a Ph.D. student in the Department of Basic Sciences in the College of Veterinary Medicine and her major professor is Dr. Shane Burgess. The title of her poster was “GORIF: A Tool for Generifs to Gene Ontology.” GeneRIFs (Gene Reference Into Function) are English language statements that describe the function of genes. The GORIF tool matches these statements to controlled vocabulary terms from the Gene Ontology. GORIF uses scoring system that evaluates genes based on their involvement in certain immune processes. The tool allows the user to get a species-specific, comprehensive and a ‘at-a-glance’ view of all the genes involved in specific biological processes.

