

## STUDENT PRESENTATION AWARDS AT THE 116TH MEETING OF THE TENNESSEE ACADEMY OF SCIENCE

### ORAL PRESENTATIONS

#### Botany

- First Place—Ryan Miller. Development and Applications of Georeferenced Herbarium Specimens. University of Tennessee, Chattanooga, Chattanooga, Tennessee.
- Second Place—Jennifer Ellis. Fitness Consequences of Varying Crossing Schemes in *Helianthus verticillatus*. Vanderbilt University, Nashville Tennessee.

#### Cell and Molecular Biology

- First Place—Payel Datta. Demonstration of Cell Proliferation in Estrogen Receptor Positive Human Breast Cancer Cell Line T47D by Synthetic Food Colorants. Austin Peay State University, Clarksville, Tennessee.
- Second Place—Sheharyar Minhas. Incorporation of Hemagglutinin into H5N1 Vaccine Virus is Independent of Matrix Gene Origin. Christian Brothers University, Memphis, Tennessee.
- Third Place—Stacey M. Morgan. Altered Lipid Composition Affects the Membrane Distribution of a Model G-Protein Coupled Receptor, STE2P, in *Saccharomyces cerevisiae*. Tennessee Wesleyan College, Athens, Tennessee.

#### Chemistry

- First Place (tie)—Thomas H. Wilson. Regioselective Double Couplings of Dihaloheteroaromatics. Middle Tennessee State University, Murfreesboro, Tennessee.
- First Place (tie)—Thomas M. Thorburn. Comparison of GC-MS Response Factors With Both Experimental and Calculated GC-FID Response Factors for Dimers and Trimers Formed During the Aldol Condensation of Acetone. Middle Tennessee State University, Murfreesboro, Tennessee.
- Second Place—Larissa S. Fenn. High-Throughput Detection and Characterization of Glycopeptides and Glycoproteins using Advanced Structural Mass Spectrometry. Vanderbilt University, Nashville, Tennessee.

#### Engineering and Engineering Technology

- First Place—N. Narayanan. Regulation of Cerebral Blood Flow in Stroke Patients with Subarachnoid Hemorrhage. The University of Memphis, Memphis, Tennessee.
- Second Place—D. M. Kirby. Gas Diffusion in Polystyrene Foam: a Multi-scale Approach. Tennessee Technological University, Cookeville, Tennessee.
- Third Place—O. Furchi. Design of Fluid Percussion Device for Studies on Head-Injury. The University of Memphis, Memphis, Tennessee.

#### Geology

- First Place—Brian Whitworth. Analysis of Urban Sprawl in Cookeville, Tennessee Using Geographic Information System Technology. Tennessee Technological University, Cookeville, Tennessee.

#### Mathematics and Computer Science

- First Place—Adrian D. Parker. Euler's Method and Truncation Error. Austin Peay State University, Clarksville, Tennessee.
- Second Place—Cameron T. Druyor. Approximating Solutions of Second-Order Boundary-Value Problems Using Finite Difference and the Shooting Methods. Austin Peay State University, Clarksville, Tennessee.
- Third Place—Nicholas A. Lardizabal. Solution for the Time-Independent Schrodinger Equation Using the Runge-Kutta Method. Austin Peay State University, Clarksville, Tennessee.

#### Microbiology

- First Place—DeLacy V. LeBlanc. Endemicity Of *Borrelia burgdorferi*, the Bacterial Agent of Lyme Disease in Middle Tennessee. Austin Peay State University, Clarksville, Tennessee.
- Second Place—Kristen Sorensen. *Caenorhabditis elegans* as a Model System for *Streptococcus pneumoniae* Infection. Belmont University, Nashville, Tennessee.
- Third Place—Prima Patel. Prodigiosin-Production and Lipid-Degradation Analysis of *Serratia Marcescens* in the Presence of Motor Oil. Middle Tennessee State University, Murfreesboro, Tennessee.

#### Science and Mathematics Teaching

- First Place—Karen Metius-House. Changes in Elementary Student Knowledge and Attitude about the Process of Science and the Environment Through an Ecological Field Study of the Cedar Glades. Middle Tennessee State University, Murfreesboro, Tennessee.

#### Zoology I

- First Place—James B. Akins. Association of Selected Climatic Variables and Capture Success of *Didelphis virginiana* in Western Tennessee. The University of Memphis, Memphis, Tennessee.
- Second Place—Sarah Jo Jenkins. Monitoring of Site Fidelity of *Pipistrellus subflavus* and Other Bat Species: Trends and Current Status in Dunbar Cave State Natural Area, Montgomery County, Tennessee. Austin Peay State University, Clarksville, Tennessee.

Third Place—Laura D. Mills. Using Macroinvertebrates to Determine Impacts of Nonpoint Source Pollution on Twelve Wetlands in Tennessee and Kentucky. Austin Peay State University, Clarksville, Tennessee.

#### Zoology II

First Place—Jonathan L. McMahan. A Preliminary Survey of Amphibians in Middle Tennessee for the Chytrid Fungus. Austin Peay State University, Clarksville, Tennessee.

Second Place—Kyle L. Sykes. Effects of Confinement on Plasma Levels of Corticosterone in the Northern Watersnake (*Nerodia sipedon*). Middle Tennessee State University, Murfreesboro, Tennessee.

Third Place—David C. Henley. Stream Salamander Diversity and Abundance in Urban and Rural Streams: A Preliminary Study. Austin Peay State University, Clarksville, Tennessee.

#### POSTER PRESENTATIONS

##### Botany

(Because no judging occurred, all student presenters are listed.)

C. A. Henson. Effect of Inter- and Intra-Specific Competition on Growth and Fecundity of *Microstegium vimineum*. The University of Memphis, Memphis, Tennessee.

A. Simpson. Determination of Soil Nutrients, Microbial Diversity, and Levels of Herbivory to Assess the Impact of *Vinca* on a Goldenseal Population. Belmont University, Nashville, Tennessee.

N. Osteen. Ecological Impact of *Lonicera maackii* as Determined by Soil Nutrients, Functional Microbial Diversity, Light, and Herbivory. Belmont University, Nashville, Tennessee.

R. Wells. Correlation of *Lonicera maackii* Density with Soil Nutrients, Microbial Diversity, Light, Herbivory, and Population Growth. Belmont University, Nashville, Tennessee.

J. F. Simpson, E. M. Cohen, and David S. Percy. Can Fescue or Zucchini Be Employed Effectively to Phytoremediate Polycyclic Aromatic Hydrocarbons from the Flood Plains of the Chattanooga Creek? University of Tennessee, Chattanooga, Chattanooga, Tennessee.

S. M. Mersch. Assessing the Migratory Vigor of *Lolium arundinaceum* in Association with a Novel Endophytic Symbiont Using Microsatellite Markers. Middle Tennessee State University, Murfreesboro, Tennessee.

##### Cell and Molecular Biology

First Place—Richard M. Sharp. q(RT)2PCR for Relative Expression of Selected Genes Along the Length of *Zea mays* Leaf. Middle Tennessee State University, Murfreesboro, Tennessee.

##### Chemistry

First Place—Lauren M. Hight. Chemical Combinations for Curing of Marine Mussel Adhesives. Belmont University, Nashville, Tennessee.

Second Place (tie)—Mary C. Clay. Synthesis and Characterization of Air-Sensitive Manganese Complexes. Austin Peay State University, Clarksville, Tennessee.

Second Place (tie)—Kristy J. Stanislav. Overloading of the Ce(IV)/SiO<sub>2</sub> Solid-Supported Reagent. Middle Tennessee State University, Murfreesboro, Tennessee.

Third Place—Elliot G. Ennis. Facile Route to C2-Substituted Imidazolium Cations. Middle Tennessee State University, Murfreesboro, Tennessee.

##### Geology

First Place—Mark F. Ziska. Waste Water Treatment Plant Site Analysis along Cane Creek in Putnam County. Tennessee Technological University, Cookeville, Tennessee.

Second Place—Brian Whitworth. Analysis of Microcrack Density in Folded Quartz Arenite near Keyser, West Virginia. Tennessee Technological University, Cookeville, Tennessee.

##### Health and Medical Science

First Place—L. Girsch. Food Security and the Utilization of Leftover Rice. The University of Memphis, Memphis, Tennessee.

##### Microbiology

First Place—John M. Lewis. The Identification of a Novel Amoeba-Associated Microorganism by 16S rDNA Sequencing and in situ Hybridization. Middle Tennessee State University, Murfreesboro, Tennessee.

Second Place—Sana Shaikh. A Comparison of the Antimicrobial Activity of Natural and Commercial Disinfectants. Middle Tennessee State University, Murfreesboro, Tennessee.

##### Zoology

First Place—Jennifer L. Leach. The Biodiversity of the Leaf Litter at Austin Peay State University Environmental Education Center Cave. Austin Peay State University, Clarksville, Tennessee.

Second Place—L. N. Anglin. The Effects of Agricultural Land Clearing on the Viability and Diet of the Maned Wolf, *Chrysocyon brachyurus*. Christian Brothers University, Memphis, Tennessee.

Third Place—Kelvin L. Pollard II. Comparative Analysis of Pastured vs. Forested Soil with Respect to Soil Fauna, Nutrients, and Abiotic Factors. Austin Peay State University, Clarksville, Tennessee.