

STUDENT PRESENTATION AWARDS AT THE 120<sup>th</sup> MEETING OF THE TENNESSEE ACADEMY OF SCIENCE

## ORAL PRESENTATIONS

## Botany

First Place—*Angelina Fowler*. The Distribution, Abundance, and Habitat Colonization of the Invasive Submersed Macrophyte, *Hydrilla verticillata*, in the Obed Wild and Scenic River, Morgan County, Tennessee. *Austin Peay State University, Clarksville, Tennessee.*

Second Place—*Emily Blyveis*. The Vascular Flora of the Tennessee River Gorge, Hamilton and Marion Counties, Tennessee. *The University of Tennessee at Chattanooga, Chattanooga, Tennessee.*

## Cell and Molecular Biology

First Place—*Alex Patterson and Bobby Rampp*. Prostate Specific Membrane Antigen Processes Laminin Downstream of Matrix Metalloproteases in Endothelial Cell Activation and Angiogenesis. *Lipscomb University, Nashville, Tennessee.*

Second Place—*Megan J. Walker*. Relative Levels of Cx26 mRNA Levels in GT1-7 Cells Following Passaging. *Austin Peay State University, Clarksville, Tennessee.*

## Chemistry

First Place—*Matt Gott*. Extractive Chromatography for the Treatment of Used Nuclear Fuel. *Tennessee Technological University, Cookeville, Tennessee.*

Second Place—*Sarah Brinkley*. Proteomic Profiling of Unnatural Amino Acid Toxicity Through Differential Expression of Wild Type vs. Telluroproteins in *Escherichia coli* DL41 (DE3) pCOCK. *Tennessee Technological University, Cookeville, Tennessee.*

Third Place—*Stephanie Meadows*. Beyond the Cookbook: Learning about Kinetics in General Chemistry Laboratory. *Tennessee Technological University, Cookeville, Tennessee.*

## Engineering and Engineering Technology

First Place—*Dhushyanth Venkatesan*. Multiple Curve Presentation and Zooming Processor using FPGA. *Tennessee Technological University, Cookeville, Tennessee.*

## Geology and Geography

First Place—*Chuck Sutherland*. A Spatial Analysis of the Southern Cave Fish. *Tennessee Technological University, Cookeville, Tennessee.*

## Health and Medical Sciences

First Place—*Karen Maynard*. Estrogen Regulates Right Ventricular Load Stress Responses in the Pulmo-

nary Artery Banding Model. *Vanderbilt University, Nashville, Tennessee.*

Second Place—*Elisa Lund*. One University's Response to the H1N1 Pandemic of 2009. *Austin Peay State University, Clarksville, Tennessee.*

## Mathematics and Computer Science

First Place—*Casey McKnight*. A Parallel Finite Element Method for the Convection-Diffusion-Reaction Equation. *Austin Peay State University, Clarksville, Tennessee.*

## Physics and Astronomy

First Place—*Phil Feurtado*. Kick Drum Tunnels: A Physical Analysis of a Recording Technique. *Belmont University, Nashville, Tennessee.*

## Zoology

First Place—*Daniel Wolcott*. Relationship of the Occurrence of the Virginia Opossum and Selected Habitat Variables. *The University of Memphis, Memphis, Tennessee.*

Second Place—*Caitlin Gussenhoven*. Niche Partitioning and Overlap between Wintering Woodpeckers in a Bottomland Hardwood Forest in Northwest Tennessee. *The University of Tennessee at Martin, Martin, Tennessee.*

Third Place—*Jerrold Shipman*. Thermal Ecology of Hibernation in the Midland Watersnake. *Middle Tennessee State University, Murfreesboro, Tennessee.*

## POSTER PRESENTATIONS

## Botany

First Place—*Adam W. Keasling*. Allelopathic Activity of *Passiflora incarnata* Extracts as Measured by *Hordeum vulgare* and *Raphanus sativus*. *Middle Tennessee State University, Murfreesboro, Tennessee.*

## Cell and Molecular Biology

First Place—*Lauren Milleville*. Characterization of the Dead Elvis (del) Mutation in Zebrafish. *The University of Tennessee at Chattanooga, Chattanooga, Tennessee.*

Second Place—*Porter W. Maerz*. Brain Derived Neurotrophic Factor Expression During Cellular Stress in T-Lymphoblasts. *Lipscomb University, Nashville, Tennessee.*

Third Place—*Ben Kellum*. Endothelin Converting Enzyme-1 Expression Levels in Breast Cancer Cells. *Lipscomb University, Nashville, Tennessee.*

## Chemistry

First Place—*Michael Beck*. Synthesis and Biological Studies of Palladium (II) Acetylpyrazine-Thiosemicarbazone Complexes. *Tennessee Technological University, Cookeville, Tennessee.*

Second Place—*Jessika Pinto*. Pretreatment of Cellulosic Feedstocks and Conversion to Simple Sugars by Enzymatic Systems: A Biofuel Initiative. *Tennessee Technological University, Cookeville, Tennessee.*

Third Place—*Talon Hill*. A Series of Alloxan Thiosemicarbazones and Reactions with Platinum and Palladium. *Tennessee Technological University, Cookeville, Tennessee.*

Expressing Human Papillomavirus. *Belmont University, Nashville, Tennessee.*

## Physics and Astronomy

First Place—*Gene Mize*. Exact Values of Dynamical Quantities in Planetary Motion. *Alabama Agricultural and Mechanical University, Normal, Alabama.*

## Science and Math Teaching

First Place—*Alison N. Carey*. Engaging High School Ecology Biodiversity Lab Activities in the NSF Triad GK-12 Program. *Middle Tennessee State University, Murfreesboro, Tennessee.*

Second Place—*Jerrod D. Shipman*. Here's The Poop about the Process of Science in a High School Biology Classroom: Making Science Real in the NSF Triad GK-12 Program. *Middle Tennessee State University, Murfreesboro, Tennessee.*

## Geology and Geography

First Place—*Blake Smelcer*. Potential Areas Across Tennessee for Solar Power Plants. *Tennessee Technological University, Cookeville, Tennessee.*

Second Place—*Jake Peterman*. Crime Rate Analysis of the United States. *Tennessee Technological University, Cookeville, Tennessee.*

## Zoology

First Place—*Davene King*. The Effect of Older Conspecifics on Growth Rate and Survival in Larval Tobacco Hornworms, *Manduca sexta*. *University of Tennessee at Martin, Martin, Tennessee.*

Second Place—*Andrew Riggs*. Reassessment of the Fishes of the Little River System, Western Kentucky. *Austin Peay State University, Clarksville, Tennessee.*

Third Place—*Daniel Armstrong*. Conservation Genetics of a Spotted Salamander [*Ambystoma maculatum* (Shaw, 1802)] Local Population in Southeast Tennessee. *The University of Tennessee at Chattanooga, Chattanooga, Tennessee.*

## Microbiology

First Place—*Krystle Irizarry*. Evaluating the Adaptation of *Staphylococcus aureus* to Several Antibiotics to Compare Efficacy of Melittin, a Novel Antimicrobial Therapy. *Austin Peay State University, Clarksville, Tennessee.*

Second Place—*Caitlyn Anderson*. The Influence of Environmental pH on Group B Streptococcus Virulence Factor Expression. *Lipscomb University, Nashville, Tennessee.*

Third Place—*Brittney D. Everhart*. Analysis of Interferon Regulatory Factor-3 Levels in Cell Lines