

BEST STUDENT PAPER AWARDS AT THE 1997 ANNUAL MEETING OF THE  
TENNESSEE ACADEMY OF SCIENCE

Oral Presentations

Botany

First Place—Kristie L. Pinkerton. Cadmium and Zinc Uptake and Translocation in the Pasture Grass (*Festuca aundinaceae*). *Lipscomb University, Nashville, Tennessee.*

Cell and Molecular Biology

First Place—Sean O'Donnell. Reovirus Serotype-Dependent Replication in Alveolar Macrophages. *Middle Tennessee State University, Murfreesboro, Tennessee.*

Second Place—Kurt Haldeman. Regulation of <sup>3</sup>H-Oxytocin Binding Sites in Porcine Myometrial Cell Monolayer Cultures. *Austin Peay State University, Clarksville, Tennessee.*

Jamie Mells. Expression of <sup>3</sup>H-Oxytocin Binding Sites in Porcine Luminal Endometrial Cells in vitro: Regulation by Steroid Hormones. *Austin Peay State University, Clarksville, Tennessee.*

Chemistry

First Place—Justin J. Hasford. Conformational Effects on the Kinetics of Flavin-Mediated Redox Reactions. *Vanderbilt University, Nashville, Tennessee.*

Second Place—Kelly D. Hopkins. The Individual Nature of Gas Chromatographic Profiles of Human Skin Surface Lipids. *Middle Tennessee State University, Murfreesboro, Tennessee.*

Engineering & Engineering Technology

Section I

First Place—Jay Paladugula. Porous Artificial Wood: Processing and Mechanical Properties. *Tennessee Technological University, Cookeville, Tennessee.*

Karena Swisher. The Study of the Pulverization of Polyurethane Foams by Pressure Shear Pulverization to Be Used As Filler in Foaming Systems. *Tennessee Technological University, Cookeville, Tennessee.*

Section II

First Place—Richard Pasley. Monitoring Brain Trauma: Comparison of Correlation Analysis Techniques of Intracranial and Arterial Pressures. *The University of Memphis, Memphis, Tennessee.*

Second Place—Heui Seong Lim. Signal Analysis Methods to Improve Reliability of Flow Measures of Condensers and Boilers. *The University of Memphis, Memphis, Tennessee.*

Third Place—William K. Kelley. Design of a Seawater Algae Filtration System Using Bivalve Mollusks. *Tennessee Technological University, Cookeville, Tennessee.*

Geology and Geography

First Place—Evan W. Spann. Stratigraphy, Clay Mineralogy, and Selected Geochemical Properties of Quaternary and Tertiary Sediments from Five Boreholes in Shelby County, Tennessee. *The University of Memphis, Memphis, Tennessee.*

Math and Computer Science

First Place—Donald Bullock. Hand Printed Character Recognition Using Sequence Comparison Techniques. *Tennessee Technological University, Cookeville, Tennessee.*

Second Place—Steve Barber. Hand Printed Character Recognition Using Picture Description Language. *Tennessee Technological University, Cookeville, Tennessee.*

Science and Math Teachers

First Place—Michelle M. Cooper. "Surviving Science": A Self-Help Program for the Science Student. *Volunteer State Community College, Gallatin, Tennessee.*

Second Place—Andrea Pryor-Ross. Electronic Calculators: To Graph Or Not To Graph. *The University of Memphis, Memphis, Tennessee.*

Physics and Astronomy

First Place—R. L. McMillen. A Comparison of the Longitudinal and Transverse Impedance Spectra of Frog Muscle measured in vivo. *The University of the South, Sewanee, Tennessee.*

Second Place—Paul Rivera. Determination of Fiber Orientation in Paper Using Polarized Light Scattering. *Tennessee State University, Nashville, Tennessee.*

## Microbiology

- First Place—Michelle Stinson. Detection of *Helicobacter pylori* in Sewage by the Polymerase Chain Reaction. *Middle Tennessee State University, Murfreesboro, Tennessee.*
- James Nokes. The Detection of *Campylobacter jejuni* in Milk. *Middle Tennessee State University, Murfreesboro, Tennessee.*
- Second Place—Kristina Fusco. The Isolation of Whey-Degrading Microorganisms Using an Agar Medium. *Middle Tennessee State University, Murfreesboro, Tennessee.*
- Third Place—Chad Brooks. Evaluation of Ribosomal Protein L9 Gene Sequence Conservation among Classes within Subphylum Vertebrata. *Middle Tennessee State University, Murfreesboro, Tennessee.*

## Zoology

- First Place—William H. Wade, II. The Effects of Electromagnetic Fields on the Swimming and Feeding Behavior of *Ictalurus punctatus* (Siluriformes: Ictaluridae). *Austin Peay State University, Clarksville, Tennessee.*
- Second Place—Lisa M. Jones. Assessment of National Marine Fisheries Service Longline Cruises from 1954 to 1996: A Preliminary Report. *East Tennessee State University, Johnson City, Tennessee.*
- Third Place—Lillian F. Barber. Monitoring of Larval Amphibian Survivorship and Development and Correlation with Fecal Bacteria Levels in Sulphur Fork Creek Watershed, Robertson County, Tennessee. *Austin Peay State University, Clarksville, Tennessee.*

## Poster Presentations

## Botany

- First Place—Andrea M. Brown. Development of Photosystem-II Centers upon Light Exposure of Dark-Grown Sunflower Seedlings. *Austin Peay State University, Clarksville, Tennessee.*

## Cell and Molecular Biology

- First Place—Sherry Young. The Effect Of Activated Peroxisome Proliferator-Activated Receptor- $\gamma$  (PPAR- $\gamma$ ) on Signal Transducers and Activators of Transcription (STATs) During 3T3-L1 Adipocyte Differentiation. *Middle Tennessee State University, Murfreesboro, Tennessee.*

## Chemistry

- First Place—Tim Rogers. Properties of Seven-Coordinate Pentagonal Bipyramidal Mn (II) and Ni (II) Complexes. *Union University, Jackson, Tennessee.*
- Second Place—Allen Bailey. Investigation of Trimethyltelluronium Iodide as a 125-Tellurium NMR Chemical Shift Reference. *Middle Tennessee State University, Murfreesboro, Tennessee.*
- Third Place—Pavan Marpaka. The Detection of Selenium and Tellurium in Seleno- and Telluroproteins Utilizing Capillary Electrophoresis. *Tennessee Technological University, Cookeville, Tennessee.*
- Honorable Mention—Eric Boswell. A Time-Resolved Study of the Chemiluminescence of Lightsticks. *Middle Tennessee State University, Murfreesboro, Tennessee.*
- Alicia Hyatt. The Biosynthesis of Selenium and Tellurium Containing Recombinant Histones for Crystallization Studies. *Tennessee Technological University, Cookeville, Tennessee.*

## Geology and Geography

- First Place—Scott M. Lucas. Control of Topography by Lithology in the Valley and Ridge of East Tennessee: A Computer Approach. *Tennessee Technological University, Cookeville, Tennessee.*

## Science and Math Teachers

- First Place—Deborah Zartman. A Serious Look at Silly Putty. *Middle Tennessee State University, Murfreesboro, Tennessee.*
- Second Place—Jennifer Watson. The Western as an Educational Experience in Biology. *Middle Tennessee State University, Murfreesboro, Tennessee.*

## Physics and Astronomy

- First Place—Rica French. WFPC2 Observations of Star Clusters in the Magellanic Clouds II. The Small Magellanic Cloud Intermediate-Age Populous Cluster NGC 416. *Middle Tennessee State University, Murfreesboro, Tennessee.*

## Medical Science

- First Place—Jeanne Beals. The Effects of Unilateral versus Bilateral Carotid Body Denervation (CBD) on Respiration. *Austin Peay State University, Clarksville, Tennessee.*
- Second Place—Kim Hodges. The Use of Inbred Rat Strains to Study Complex Disease. *Austin Peay State University, Clarksville, Tennessee.*

## Zoology

- First Place—Kevin C. Fitch. The Amphibians and Reptiles of Dunbar Cave State Natural Area, Montgomery County Tennessee. *Austin Peay State University, Clarksville, Tennessee.*
- Second Place—James P. Moore. Tiger Hunting in Tennessee (Diptera: Culicidae: *Aedes albopictus*). *Austin Peay State University, Clarksville, Tennessee.*