

**Tennessee Academy of Science**

*TAS*

**Program**

**of the**

**112<sup>th</sup> Meeting**

**East Tennessee State University**

**Johnson City, Tennessee**

**November 14-15, 2002**

## **Institutional Sustaining Members of the Tennessee Academy of Science**

Austin Peay State University

College of Graduate Health Sciences,  
University of Tennessee Health Sciences Center  
in affiliation with  
St. Jude Children's Research Hospital

Middle Tennessee State University

Rhodes College

Tennessee Technological University

The University of Tennessee at Martin

## **Affiliated Societies of the Tennessee Academy of Science**

American Association for the Advancement of Science

Barnard Astronomical Society

Clarence T. Jones Memorial Observatory

National Association of Academies of Science

Tennessee Association of Science Department Chairs

Tennessee Entomological Society

Tennessee Junior Science and Humanities Symposium

Tennessee Psychological Association

Tennessee Science Teachers Association

### **TAS Home Page Information**

For information about TAS, including information for the annual meeting, the Tennessee Visiting Scientist Program, the membership database, and winners of the student paper and poster competitions, visit the TAS website at: <http://tas.rhodes.edu/tas.htm>

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## ANNOUNCEMENTS

**Slide Viewing Room:** SAC Conference Room—First floor Culp University Center

**Registration:** Meeting attendees may register in the Lobby of the Culp Auditorium during the morning (7:30 a.m. until 11:30 a.m.) and in the Atrium (Culp Center-third floor) until 1:00 p.m.

**Tickets for the Annual Luncheon** may be purchased for \$10.00 at the Registration Desk.

**Membership:** Application forms for membership in the Tennessee Academy of Science are available at the Registration Desk. A completed application accompanied by first year dues may be left with the TAS Treasurer at the Registration Desk or mailed to: Dr. John Harris, Biology Dept., TTU, Cookeville, TN 38505. Annual dues, which include a subscription to the Journal are \$20.00; Sustaining Members, \$25.00; Supporting members, \$30.00; Life Members, \$200.00. All student memberships are \$10.00.

## MEETING AGENDA

### Thursday, November 14, 2002

6:00 p.m.-10:30 p.m.                      **Executive Committee Meeting**  
Culp University Center, Tennessee Room

### Friday, November 15, 2002

7:30 a.m.-1:00 p.m.                      **Registration and Refreshments**  
**Auditorium Lobby**  
D.P. Culp University Center

8:30 a.m.-1:00 p.m.                      **Posters on Display**  
Culp University Center, Ballroom

8:10 a.m.-8:40 a.m.                      **Annual Science Chairs Meeting**  
Culp University Center  
Tennessee Room

8:00 a.m.-8:40 a.m.                      **JTAS Section Editors Meeting**  
D.P. Culp University Center, Forum

8:45 a.m.-11:00 a.m.                      **General Session**  
D.P. Culp University Center, Auditorium

8:45 a.m.-8:50 a.m.                      **Welcome to Membership**  
D.P. Culp University Center, Auditorium  
Dr. Bert C. Bach, Provost/Vice President

8:50 a.m.-9:30 a.m.                      **Business Meeting**  
D.P. Culp University Center, Auditorium  
Dr. Jack Rhoton, Presiding

9:30 a.m.-10:30 a.m.                      **TAS Plenary Session**  
D.P. Culp University Center, Auditorium  
Presentation by Dr. Steven Wallace  
**“Paleoecological Interpretation of the Gray Fossil  
Site (Miocene), Washington Co., Tennessee”**

10:30 a.m.-12:00 p.m.                      **Poster Viewing and Evaluation**  
D.P. Culp University Center, Ballroom

12:00 p.m.-1:00 p.m.                      **Annual Luncheon**  
D.P. Culp University Center, Ballroom

1:10 p.m.-1:15 p.m.                      **Section Business Meetings**  
D.P. Culp University Center, Tennessee Room

1:15 p.m.-                                      **Technical Sessions**  
D.P. Culp University Center

## **GENERAL SESSION**

Auditorium, D.P. Culp University Center  
8:45 a.m., November 15, 2002  
Dr. Jack Rhoton, Presiding

## **WELCOME**

Dr. Bert Bach, Provost/Vice-President of Academic Affairs  
East Tennessee State University

## **8:50 a.m. BUSINESS MEETING**

Auditorium, Culp University Center  
Dr. Jack Rhoton, Presiding

## **TAS PLENARY SESSION**

9:30 a.m.

### **Keynote Address**

Dr. Steven Wallace  
Assistant Professor of Geology  
East Tennessee State University

Steven Wallace joined the Department of Geography, Geology & Geomatics at East Tennessee State University in 2001. Dr. Wallace is responsible for providing technical advice and developing the long-ranged plans for utilization of the Gray Fossil Site in Washington County, Tennessee. Prior to joining East Tennessee State University, he received his B.S. (1995), Cum Laude, Geology, Bowling Green State University, Bowling Green Ohio; M.S. (1997), Geology, Fort Hays State University, Hays, Kansas; Ph.D. (2001), Vertebrate Paleontology, University of Iowa, Iowa City, Iowa.

Presentation

**Paleoecological Interpretation of the Gray Fossil Site (Miocene),  
Washington, Co., Tennessee**

### **Poster Viewing and Evaluation**

10:30 a.m.-1:00 p.m.

### **Lunch in the Culp Student Center, Ballroom**

12:00-1:00 p.m.

### **TAS Future meeting Sites:**

2003 Nashville (Joint meeting with Tennessee Science Teachers Association)  
2004 Columbia State Community College (Columbia)  
2005 University of Tennessee at Martin (Martin)

**BOTANY**  
**Meeting Room 1**  
**Dr. Jeffrey L. Walck, presiding**  
**Middle Tennessee State University**

- 1:10 pm      **Section Business Meeting: Election of Section Officers for 2003**
- 1:15          **Two Novel Transposable Elements Identified In A Computerized Survey Of The Rice (*Oryza sativa* L.) Genome.** Todd C. Wood and Leah Lavoie\*, Bryan College
- 1:30          **Clarification Of *Carex* Section *Phaestoglochin* In Tennessee, With Particular Reference To *C. radiata* L.** Dwayne Estes\* and Jeffrey L. Walck, Middle Tennessee State University
- 1:45          **The Status Of *Castanea dentata* On The Northern Highland Rim Of Kentucky And Tennessee** Joe Schibig, Rex Barber, Jack Torkelson<sup>#</sup>\*, Michael Hill\*, and Jeannie Katzenmiller, Volunteer State Community College (JS, RB, JT, JK), and Austin Peay State University (MH)
- 2:00          **Nitrogen and Carbon Use In Three Lemnacean Taxa** G. Shinde\*, T.J. Durham\*, and S.K. Ballal, Tennessee Technological University
- 2:15          **Closing Remarks**

\* student author

# presenting author, if not first author

**CELL and MOLECULAR BIOLOGY**  
**Meeting Room 2**  
**Dr. Matt Elrod-Erickson, presiding**  
**Middle Tennessee State University**

- 1:10 pm      **Section Business Meeting: Election of Section Officers for 2003**
- 1:15          **The BST1 Gene Product Is A Negative Regulator Of Vesicle Budding From The Endoplasmic Reticulum, And May Contain A Lipase Domain** Todd Edwards\* and Matt Elrod- Erickson, Middle Tennessee State University
- 1:30          **Glucocorticoids And C-Ret Expression During *Mus musculus* Nephrogenesis** Ethel Cobbett\* and Gore Ervin, Middle Tennessee State University
- 1:45          **DNA Synthesis After Exposure To Heavy Metals In The Testis Of The Spiny Dogfish *Squalus acanthias*** J. Michael Redding, Tennessee Technological University
- 2:00          **Closing Remarks**

\* student author

# presenting author, if not first author

**CHEMISTRY**  
**Dining Room 2**  
**Dr. Ismail Kady, presiding**  
**East Tennessee State University**

- 1:10 pm      **Section Business Meeting: Election of Section Officers for 2003**
- 1:15          **Use of Signature Molecular Descriptor for Compound Design and Library Screening** Archana Kotee\* and Donald P. Visco, Tennessee Technological University
- 1:30          **Weekly Coordinating Anions: NQR Studies of Oxygen-Metal Binding in Metal Chloroacetates and Trichloromethanesulfonates (Trichlates)** Gary P. Wolfsberg, Michael Cochran\*, Janie Wilcox\*, and Debra J. Jackson\*, Middle Tennessee State University
- 2:00          **Closing Remarks**

\* student author

# presenting author, if not first author



**ENGINEERING and ENGINEERING TECHNOLOGY**  
**Culp Auditorium Right**  
**Dr. Chin-Zue Chen, presiding**  
**Austin Peay State University**

- 1:10 pm      **Section Business Meeting: Election of Section Officers for 2003**
- 1:15            **Selection Of Optimum Machining Parameters In CNC Milling And Turning Processes** Ismail Fidan, Tennessee Technological University
- 1:30            **Teaching Performance Evaluation Of Transmission Lines Through An Electronics Engineering Technology Students' Project** Adel Salama, Austin Peay State University, and Ashraf Saad, Georgia Institute of Technology
- 1:45            **Using Concept Maps For Teaching And Learning Electronics Engineering Technology** Ashraf Saad, Georgia Institute of Technology, and Adel Salama, Austin Peay State University
- 2:00            **Comparison Of Second And Third Order Models Of Intracranial Pressure Dynamics** Michael L. Daley, S. Surapaneni, K. Madala, University of Memphis and Charles W. Leffler, University of Tennessee Health Science Center
- 2:15            **Dynamic Regulation Of Cerebral Blood Flow In Reponse To Vascular Challenge** Michael L. Daley, V. Srinivasan, P. Balasubramanian, University of Memphis and Charles W. Leffler, University of Tennessee Health Science Center
- 2:30            **Plastics Injection Molding – Molding The Student To Design A Mold** John L. Byrd, Austin Peay State University
- 2:45            **BREAK**
- 3:00            **A Transitional Training Technique From Basic To Advanced Manufacturing Processes** John L. Byrd, Austin Peay State University
- 3:15            **Micronizing Field Flow Fractionation** N. Vyas, J. J. Biernacki, G. Cunningham, M. J. M. Wells, and S. Mahajan, Tennessee Technological University
- 3:30            **Modeling The Solubility Of Foam Blowing Agents In Polyols** Banganathan Parthasarathy\* and Donald P. Visco Jr., Tennessee Technological University
- 3:45            **Modeling Of Refrigerant Mixtures Using SAFT-VR Equation Of State** Saravanan Swaminathan\* and Donald P. Visco Jr., Tennessee Technological University
- 4:00            **Molecular Modeling Of HFC – R245FA** Anand Narayanan\* and Donald P. Visco Jr., Tennessee Technological University
- 4:15            **Kinetics And Microscopic Study Of The Reaction Between Blast Furnace Slag And Calcium Hydroxide** K. Meenakshisundaram\*, and J. J. Biernacki, Tennessee Technological University
- 4:30            **Catalytic Carbonmonoxide Mems Sensor** Himabindu V. Gopisetti\*, Raghavendra R. Watada\*, and Joseph J. Biernacki, Tennessee Technological University
- 4:45            **Mechatronics – An Engineering Technology Perspective** Chin-Zue Chen, John W. Blake, Austin Peay State University

5:00

**Closing Remarks**

\* student author

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**ETHICS in SCIENCE and TECHNOLOGY**  
**Dining Room 3**  
**Dr. Rubye Prigmore-Torrey, presiding**  
**Tennessee Technological University**

- 1:10 p.m.      **Introductory Remarks**
- 1:15            **Legislating A Common Morality In Cyberspace** Joseph Kizza, University of Tennessee-Chattanooga
- 1:40            Presentation of Panel and Panelists  
**Research Integrity: Where Are We Now And Where Are We Going?**
- 1:45            **Research Integrity: What Does It Mean?** Rubye Prigmore Torrey, Tennessee Technological University
- 2:10            **Research Integrity: Plagiarism in the Classroom.** Donald B. Sanderson, East Tennessee State University
- 2:35            **BREAK**
- 2:50            **Research Integrity: How Shall We Teach It?** Jeffrey G. Wardeska, East Tennessee State University
- 3:15            **Research Integrity: Conflict of Interests** Michael L. Woodruff, East Tennessee State University
- 3:40            **Section Business Meeting: Election of Section Officers for 2003**

**GEOLOGY and GEOGRAPHY**  
**Meeting Room 3**  
**Dr. Habte G. Churnet, presiding**  
**University of Tennessee - Chattanooga**

- 1:10 pm      **Section Business Meeting: Election of Section Officers for 2003**
- 1:15          **Harpeth River Watershed Sediment Study September 2000 - August 2002: Final Report** David J. Wilson, Brown and Caldwell
- 1:30          **Comparative Taphonomy Of Scyphocrinites Loboliths From 2 West Tennessee Localities** Ryan Beasley\*, Adam Hames\*, Michael Latham\*, Mark McKee\*, Elizabeth Rhenberg\*#, Chris Seifert\*, Yuko Takashita\*, Mary Uldrich\*, Jane Whitnell\*#, and Michael Gibson, University of Tennessee - Martin
- 1:45          **A New Species Of Fossil Dendropanax From The Claiborne Formation, Western Tennessee** B. Roger Moore, University of Tennessee at Martin, and David L Dilcher, University of Florida
- 2:00          **Death Valley And The Depositional Setting Of The Tennessee Ocoee Series** Ryan Faber\*and Habte G. Churnet, University of Tennessee – Chattanooga
- 2:15          **Is The Chilhowee Mountain Of The Tennessee Western Blue Ridge A Klippe?** Habte G. Churnet, University of Tennessee - Chattanooga
- 2:30          **Closing Remarks**

\* student author

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***CAMPUS MAP in CENTER of PROGRAM***  
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**HEALTH and MEDICAL SCIENCES**

**Forum Room**

**Dr. Fred E. Hossler, presiding**  
**East Tennessee State University**

- 1:10 pm      **Section Business Meeting: Election of Section Officers for 2003**
- 1:15          **Nicotine Alleviation Of Cognitive And Motor Deficits In A Rodent Model Of Schizophrenia: Underlying Mechanisms** Russell W. Brown, Kimberly Thompson, Kenyatta D. Thompson, Jeffrey J. Ward, Stephanie K. Thacker, Michael T. Williams, and Richard M. Kostrzewa, East Tennessee State University (RWB, KT, KDT, JJW, SKT, RMK), and University of Cincinnati (MTW).
- 1:30          **Reovirus Antigen Expression In A Transformed And A Non-Transformed Human Cell Line** Jason K. Alexander\* and Anthony L. Farone, Middle Tennessee State University
- 1:45          **Mast Cell Infiltration And Angiogenesis In Preneoplastic Esophagus** O. Aljitawi, G. Krishnaswamy, G. Youngberg, S. Whaley, and K. Krishnan, East Tennessee State University
- 2:00          **Adult Stem Cell Transplantation Into Ischemic Myocardium** J. Carter\*, F. Hossler, B. Rowe, J.Davis, E. Ibrahim, and R. Kao, East Tennessee State University
- 2:30          **BREAK**
- 2:45          **Enoxaparin Induced Skin Necrosis In A Patient With Factor XII Deficiency: A Case Report** O. Aljitawi, W. Abu-Auda, and A. Karnad, East Tennessee State University
- 3:00          **The Pharmacokinetics Of (1-3) $\beta$ -D Glucans.** Luke Barker\*, Brent Lockhart, Liz Adams, Peter J. Rice, and David L. Williams, East Tennessee State University
- 3:15          **Microvasculature Of The Dog Urinary Bladder Revealed With Vascular Corrosion Casting And SEM.** Fred E. Hossler, Courtney W. Ridner, and Race L. Kao, East Tennessee State University
- 3:30          **Closing Remarks**

\* student author

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**HISTORY of SCIENCE**  
**Dining Room 1**  
**Dr. George E. Webb, presiding**  
**Tennessee Technological University**

- 1:10 pm      **Section Business Meeting: Election of Section Officers for 2003**
- 1:15          **A Hidden Chapter In Biological Warfare During World War I** Frederick H. Kasten,  
East Tennessee State University
- 1:30          **"We Have No 'Erring Brethren' To Welcome Back In Our Midst": The AAAS  
Meeting In Nashville, 1877** George E. Webb, Tennessee Technological University
- 1:45          **An Endoparasitic Snake? Rutherford County Medicine Meets The X-Files In The  
1870s** C. Steven Murphree, Belmont University
- 2:00          **World War One And The Origin Of The American Dye Industry** Frederick H.  
Kasten, East Tennessee State University
- 2:15          **Through The Side Door: History Of Science As Science In The Undergraduate  
Curriculum** Thomas A. Furtsch and George E. Webb#, Tennessee Technological  
University
- 2:30          **Closing Remarks**

\* student author

# presenting author, if not first author



**MATH and COMPUTER SCIENCE**  
**Meeting Room 4a**  
**Dr. Jeff Knisley, presiding**  
**East Tennessee State University**

- 1:10 pm      **Section Business Meeting: Election of Section Officers for 2003**
- 1:15          **Incorporating ORACLE Into The Undergraduate DBMS Class, Lessons Learned**  
Don Sanderson and Lorie Moffit, East Tennessee State University
- 1:30          **Securing A Regional College Campus Computer Network: A Case Study** Rick  
Simons\* and Phil Pfeiffer, East Tennessee State University
- 1:45          **Lessons Learned: Online And Augmented Online Teaching Of A Software Analysis  
And Design Class** Srini Ramaswamy, Tennessee Technological University
- 2:00          **Relativity And Rocket Powered Flight** Yousef Mohammed\* and Jeff Knisley , East  
Tennessee State University
- 2:15          **Green's Function For An Equivalent Cable Model** Scott La Voie\* and Jeff Knisley ,  
East Tennessee State University
- 2:30          **Closing Remarks**

\* student author

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**MICROBIOLOGY**  
**Meeting Room 6**  
**Dr. Jeff Leblond, presiding**  
**Middle Tennessee State University**

- 1:10 pm      **Section Business Meeting: Election of Section Officers for 2003**
- 1:15          **Detection Of A Tick-Borne Enterovirus In Patient Cerebrospinal Fluid**  
Eric C. Freundt\* and Stephen M. Wright, Middle Tennessee State University
- 1:30          **Isolation And Identification Of Lipase-Producing Microorganisms**  
Kimber J. Logan-Dunn\* and John M. Zamora, Middle Tennessee State University
- 1:45          **Allelopathic And Antimicrobial Properties Of *Ligusticum porteri***  
Jesse M. Carter\* and John M. Zamora, Middle Tennessee State University
- 2:00          **Drink Or Swim: Bacteriological Water Quality Of Areas On The Stones River And J. Percy Priest Lake** Jaime L. Rogers\* and John M. Zamora, Middle Tennessee State University
- 2:15          **BREAK**
- 2:30          **A Computer-Simulated Neural Network To Detect The Spore Of *Bacillus anthracis* In Aerosol From Light Scattering Measurements** Patricia G. Hull and Thomas Mason\*, Tennessee State University
- 2:45          **Superinfection With Herpes Simplex Virus Type 2 Induces A Persistent Morphology In *Chlamydia trachomatis*** Srilekha Deka\* Sophie Dessus-Babus, Judy Whittimore, Priscilla B. Wyrick, and Robert V. Schoborg, East Tennessee State University
- 3:00          **Construction Of An Expression Vector For The Identification Of Genes Required For The Production Of Heterobactin In *Rhodococcus erythropolis***  
Samuel E. Moretz\* and Bert C. Lampson, East Tennessee State University
- 3:15          **Closing Remarks**

\* student author

# presenting author, if not first author

**PHYSIC AND ASTRONOMY**  
**Meeting Room 4b**  
**Dr. Robert Marlowe, presiding**  
**University of Tennessee – Chatanooga**

1:10 pm            **Section Business Meeting: Election of Section Officers for 2003**

2:30                See Microbiology (Room 6) for physics-related presentation by P.G. Hull and T. Mason

**SCIENCE and MATH TEACHING**  
**Culp Auditorium Left**  
**Dr. Judith Bonicamp, presiding**  
**Middle Tennessee State University**

- 1:10 pm      **Section Business Meeting: Election of Section Officers for 2003**
- 1:15          **Basic Electric And Magnetic Concepts: Are They Forgotten Or Never Learned?**  
Roy W. Clark, Middle Tennessee State University
- 1:30          **How A Team Of Undergraduate Teaching Interns Rejuvenated An ACS Chemistry Program** Judith M. Bonicamp, Middle Tennessee State University
- 1:45          **Free Math And Science Education Resources On The Internet** Judith H. Hector,  
Walters State Community College
- 2:00          **Determining Rate Laws Of Everyday Processes** Amy J. Phelps and Michael J. Sanger,  
Middle Tennessee State University
- 2:15          **Determining Rate Laws Of Everyday Processes** Amy J. Phelps and Michael J. Sanger,  
Middle Tennessee State University
- 2:30          **BREAK**
- 2:45          **Demonstration Of A Year-Long General Chemistry Course On The Internet Using Course Info** Earl F. Pearson, Middle Tennessee State University
- 3:00          **Using Computer Animations To Teach Chemistry At The Molecular Level** Michael  
J. Sanger, Middle Tennessee State University
- 3:15          **Technical Errors In Middle And High School Science Texts** David J. Wilson,  
Brown and Caldwell Company
- 3:30          **The Power Of Practice: What Students Learn From How We Teach.**  
Amy J. Phelps, Middle Tennessee State University
- 3:45          **The Effectiveness Of Cooperative Learning As An Instructional Strategy In Large, Nonmajors College Biology Classes** Kim Cleary Sadler, Middle Tennessee State University
- 4:00          **The Tennessee Junior Academy Of Science: Sixty Years Of Service To Secondary Science Students.** Jack Rhoton, East Tennessee State University
- 4:15          **Closing Remarks**

\* student author

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**ZOOLOGY**  
**Tennessee Room**  
**Dr. George Murphy, presiding**  
**Middle Tennessee State University**

- 1:10 pm      **Section Business Meeting: Election of Section Officers for 2003**
- 1:15            **Predation On Nests Of Northern Bobwhites (*Colinus Virginianus*): Observational Evidence For Vertebrates** Jason B. Jennings\*, Michael L. Kennedy, and Alan E. Houston, University of Memphis (JB, MK), and University of Tennessee (AH)
- 1:30            **An Assessment Of Biodiversity Of Small Mammals In Three Habitat Types In Western Tennessee** Heidi L. LaMountain\*, and Michael L. Kennedy, University of Memphis
- 1:45            **Harvest Data For White-Tailed Deer At Milan Army Ammunition Plant (1986-2000)** Monica Pope\*, Michael L. Kennedy, and Floyd W. Weckerly, University of Memphis(MP, MK) and Southwest Texas State University (FW)
- 2:00            **An Assessment Of Mammalian Visitation To Scent Stations In Three Habitat Types.** Erica Hessen\*, Brian Carver\*, and Michael L. Kennedy, University of Memphis
- 2:15            **Habitat Use By Three Species Of Shrew In Western Tennessee** Melita E. Smith\*, Michael L. Kennedy, and James A. Huggins, The University of Memphis (MS, MK), and Union University (JH)
- 2:30            **BREAK**
- 2:45            **An Assessment Of Spatial Partitioning Of Habitat Among Mammalian Mesopredators** Brian D. Carver\*, Michael L. Kennedy, and Alan E. Houston, The University of Memphis (BC, MK), and University of Tennessee (AH)
- 3:00            **The Use Of Passive Integrated Transponders (Pits) In Studies Of The Life History And Ecology Of *Eumeces fasciatus* And *E. laticeps*** Joseph R. Schiller, Amelia Lewis\*, and Amy Evjen\*, Austin Peay State University
- 3:15            **Multi-Scale Breeding Bird And Land-Cover Associations With Surface Modeling Of Urban Impact** J. Russell Butler, University of Michigan
- 3:30            **Association Of Selected Habitat Variables To Capture Success Of Mesopredators** Roger A. Baldwin\*, Michael L. Kennedy, and Alan E. Houston, University of Memphis (RB, MK), and University of Tennessee (AH)
- 3:45            **Long-Term Dynamics In A Population Of Raccoons, *Procyon lotor*, In Southwestern Tennessee** John R. Hisey\*, Michael L. Kennedy, Troy A. Ladine, and Shannon A. Maris-Danley, Lee University (JH), and University of Memphis ( MK, TL, and SM-D)
- 4:00            **Closing Remarks**

\* student author

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## POSTERS ON DISPLAY Culp Ballroom

\*student author # presenting author, if not first author

### BOTANY

**The Physiological Significance Of Nonphotochemical Dissipation Of Excess Light Energy By The Photosystem-II Core During The Development Of Photochemistry.** Jefferson G. Lebkuecher, Mandi M. Coleman<sup>#\*</sup>, Stephanie M. Gunn<sup>#\*</sup>, James O. Harmon<sup>#\*</sup>, Rebecca A. Houtman<sup>#\*</sup>, Rhonda P. Johnston<sup>#\*</sup>, Tanya M. North<sup>#\*</sup>, and April S. Warren<sup>#\*</sup>, Austin Peay State University

### CELL AND MOLECULAR BIOLOGY

**The Regulation And Activation Of STATS By CNTF In Adipocytes.** William Stewart, Sanjin Zvonic, and Jacqueline M. Stephens, Middle Tennessee State University (WS) and Louisiana State University, Baton Rouge, Louisiana (SZ, JS).

### CHEMISTRY

**Nickel Depletes Glutathione Levels in Human Monocytic Progenitor Cells (U937 Cells).** William Y Boadi, Justin B. Anderson <sup>#</sup>, Lonnie Sharpe, Tennessee State University and Samuel E. Adunyah, Meharry Medical College

**Effect of Glutathione Levels in Leukemia U937 Cells.** William Y. Boadi, Brooke Henderson <sup>#</sup>, Peter A. Iyere, Lonnie Sharpe, Tennessee State University and Samuel E. Adunyah, Meharry Medical College

**To Buy or Not to Buy: Preparation of Colloidal Silica Spheres.** Cynthia R. Allison<sup>\*</sup>, Cameron K. Gren<sup>\*</sup>, Marion R. Wells, and Andrienne C. Friedli, Middle Tennessee State University

**Synthesis of Amino- and Carboxylic Acid-Terminated Organosilanes.** David E. Noga <sup>\*</sup>, Cynthia R. Allison<sup>\*</sup>, Adam F. Farmer<sup>\*</sup>, and Andrienne C. Friedli, Middle Tennessee State University

**Controlled Coating of Colloids: Organosiloxane Films on Silica Nanoparticles.** David E. Noga <sup>#</sup>, Cynthia R. Allison<sup>\*</sup>, Adam F. Farmer<sup>\*</sup>, and Andrienne C. Friedli, Middle Tennessee State University

**Producing Push-Pull Polyene Pigments: The Electronic Effect of Indoline and Piperidine Donors.** Robert W. Tilford<sup>#</sup>, and Andrienne C. Friedli, Middle Tennessee State University

### HEALTH SCIENCES

**Vertebral Artery Dissection; An Unusual Cause Of Respiratory Failure In The Elderly.** Halim Abou Faycal, East Tennessee State University

**Noninvasive Detection Of BER Frequency Of GI Smooth Muscle In Preliminary Colectomy Studies With Squid Magnetometer.** Brenda J. Christopher<sup>\*</sup>, Andrew J. Meyers, Jared Sims, James K. McDowell, Bill Richards, and Alan Bradshaw, East Tennessee State University (BJC), Vanderbilt University Medical Center (BJC, AGM, KS, JGM, BR), and Vanderbilt University (AB)

**Expression Of Surface Receptors On Bronchial Smooth Muscle Cells.** Steven A. Lee<sup>\*</sup>, S. Matthew Fitzgerald, Scott Reynolds, David. S. Chi, and Guha Krishnaswamy, East Tennessee State University

**Uncommon Cause Of Chest Pain And Abnormal ECG In Young Man.** Daniel Merrick, Said Iskandar, and Kim Dittus, East Tennessee State University

**Effect Of Vitamin E On Immunological Stress Responses.** Daniel Merrick, David S. Chi, William Stone, Guha Krishnaswamy, and Joseph Neumann, East Tennessee State University

**5-AZA-2'-Deoxycytidine For Myocardial Infarctions.** Esha Ibrahim, Janet W. Davis, Thomas K. Chin, and Race L. Kao, East Tennessee State University

## **MATH AND COMPUTER SCIENCE**

**Augmenting Microsoft Visio To Generate SQL From ER Diagrams The METS Project** Justin Starnes (S) Don Sanderson(T) East Tennessee State University, Johnson City, Tennessee

**Development Of A Data Warehouse Of Academic Outcome Assessment Data** Margaret Lester(S) Don Sanderson(T) East Tennessee State University, Johnson City, Tennessee

## **MICROBIOLOGY**

**Novel Penicillin Resistance in *Moraxella catarrhalis*** James Fairman\*, Foster Levy, and Elaine Walker, East Tennessee State University

## **PHYSICS AND ASTRONOMY**

**Microvariability in Mira Stars** Gary D. Henson, Jennifer Reiff\*, Heather Guenther\*, and Charles Huffman\* East Tennessee State University (GDH, CH), Otterbein College (JR), Biola University (HG)

## **SCIENCE AND MATH TEACHING**

**Using Hardware Materials To Model The Mole, Stoichiometry, And Limiting Reactant In A Laboratory Exercise For Introductory Chemistry Students** Tammy Melton and Larry Scheich, Middle Tennessee State University and St. Norbert College

## **ZOOLOGY**

**A Study Of The Efficacy Of Passive Integrated Transponders (Pits) For Permanent Identification Of *Eumeces fasciatus* And *E. laticeps*.** Amelia Lewis\*, Joseph R. Schiller, and Amy Evjen\*, Austin Peay State University

**A Study Of The Effect Of Tail Autotomy On Social Dominance Among Male Five Lined Skink, *Eumeces fasciatus*, In Contests Over Mating Access To Reproductive Females.** Amy Evjen\*, Joseph R. Schiller, and Amelia Lewis\*, Austin Peay State University

***Corbicula fluminea* (Bivalvia:Molusca) Glycogen Concentration And Condition Indices As Indicators Of Habitat Quality In The Upper Wolf River, Tennessee And Mississippi.** David H. Kesler, Rhodes College

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