

Tennessee Academy of Science

TAS

Program

of the

118th Meeting

jointly with the

Tennessee Science Teachers Association

Sheraton Music City Hotel

Nashville, Tennessee

November 20-22, 2008

Institutional Sustaining Members of the Tennessee Academy of Science

Austin Peay State University
Middle Tennessee State University
Motlow State Community College
Rhodes College
Lincoln Memorial University
Tennessee Technological University
The University of Tennessee, Knoxville
The University of Tennessee at Martin
The University of Tennessee Space Institute
Volunteer State Community College

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 Psychological Association
Tennessee Junior Science and Humanities Symposium
Tennessee Science Teachers Association

TAS Home Page Information

For information about TAS, including information for the annual and collegiate division meetings, the Tennessee Visiting Scientist Program, the membership list, and more, visit the TAS website at:

<http://www.mtsu.edu/~tnacadsc/>

TAS Future Meeting Sites

2009 The University of Tennessee at Knoxville

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ANNOUNCEMENTS

Registration: Meeting attendees may register by mail (see previous mailing) or onsite at the Sheraton Music City Hotel on November 21-22, 7:30 AM–noon

Luncheon Tickets. Extra tickets may be available for \$25 at the registration table.

Membership: Application forms for membership in the Tennessee Academy of Science will be available at the Registration Desk. A completed application accompanied by first year dues may be left for the TAS Treasurer at the registration table or mailed to: Dr. Steven Murphree, Department of Biology, Belmont University, 1900 Belmont Blvd., Nashville, TN 37212-3758. Current annual dues by category are: Regular \$30; Sustaining, \$35; Supporting, \$40; Life, single payment \$300; Student or Emeritus, \$10. Membership includes a subscription to the TAS Journal.

MEETING SCHEDULE

Thursday, November 20

6:30 – 8:00 **TSTA Welcome Reception (TAS members invited)**
 Hermitage Exhibit Hall

Friday, November 21

7:30 - noon **Registration - Plantation Lobby**

7:50 - 10:00 **TAS Symposium: Advances in Teaching Evolution -**
 Tulip Grove Salon E

8:30 - 10:00 **TAS Symposium: Development of Science Infrastructure in**
 Tennessee – Tulip Grove Salon F

8:30 - 11:00 **Poster Session (attended 10:00-11:00) – Plantation Lobby**

10:00 - 11:00 **Science Chairs Meeting – Evergreen Room**

9:00 - 10:00 **Journal Editors' Meeting with Section Chairs, Collegiate Division**
 Directors - Room 1081

11:00 - 12:30 **TAS/TSTA Luncheon, Plenary Lecture and Awards –**
 Tulip Grove Ballroom

1:00 - closing **Section Business and Technical Sessions I:**
 Botany, Cell and Molecular, Chemistry, Engineering and Engineering
 Technology, Geology and Geography, Health and Medicine,
 Microbiology, Physics and Astronomy, Zoology

5:30 - 9:00 **TAS Executive Committee Meeting – Hunter's Parlor**

Saturday, November 22

8:00 - 9:00 **2008 TAS Business Meeting**

7:50 - 11:00 **Section Business and Technical Sessions II:**
 History of Science, Math and Computer Science, Science and Math
 Teaching

9:00 - 1:00 **TAS Field Trip: Radnor Lake State Natural Area**

TAS SYMPOSIUM: ADVANCES in TEACHING EVOLUTION

Friday 7:50 - 10:00, Tulip Grove Salon E

Dr. Michael A. Gibson, Presiding

Professor of Geology, University of Tennessee, Martin

There are many obstacles to teaching evolution in public schools and for training pre-service teachers in this regard. This symposium brings together practicing teacher to share their experiences, the State Science Consultant to provide the State of Tennessee's position and roll in teacher training, and members of the higher education community who train pre-service teachers who will share ideas on how to better serve the K-12 teaching learning community on teaching and learning evolution across the curriculum.

- 7:50 INTRODUCTION
- 8:00 OBSTACLES IN TEACHING EVOLUTION.
Pat Royle and Fran Hamilton
- 8:15 ADDRESSING THE STANDARDS FOR TEACHING THE CONCEPTS OF EVOLUTION IN K-12.
Linda Jordan
- 8:30 HOW SCIENCE WORKS: THE NATIONAL ACADEMY OF SCIENCES, THE TENNESSEE SCIENCE FRAMEWORK, AND THE TEACHING OF EVOLUTION IN PUBLIC SCHOOLS.
George Webb
- 8:45 CAN ASTRONOMY HELP WITH THE TEACHING OF EVOLUTION?
Lionel Crews
- 9:00 DARWIN AND THE TREE-HUGGERS: EFFECTIVE STRATEGIES FOR TEACHING EVOLUTION AND NATURE CONSERVATION.
Michael L. McKinney
- 9:15 SOCIAL INFLUENCE AND THE TEACHING OF EVOLUTION.
Brian Johnson, Angie MacKewn, Lionel Crews, and Michael Gibson
- 9:30 TRAINING TEACHERS TO TEACH EVOLUTION: DO WE NEED A NEW APPROACH?
Michael A. Gibson
- 9:45 SUMMARY DISCUSSION & RECOMMENDATIONS

**TAS SYMPOSIUM: DEVELOPMENT OF SCIENCE INFRASTRUCTURE IN
TENNESSEE**

Friday 8:30 - 10:00, Tulip Grove Salon F

Dr. David M. Hercules, Presiding

Centennial Professor of Chemistry, Vanderbilt University

STRATEGIC RESEARCH: A DRIVER OF INNOVATION IN TENNESSEE

Eric Cromwell, CEO, Tennessee Technology Development Corporation

**NATIONAL SCIENCE FOUNDATION EPSCoR PROGRAM:
A BENEFIT TO SCIENCE AND ENGINEERING IN TENNESSEE**
Dr. David M. Hercules, Professor of Chemistry Emeritus, Vanderbilt University

NANOCRYSTALS: FUNDAMENTAL BUILDING BLOCKS OF NANOTECHNOLOGY

Dr. Sandra Rosenthal, Professor of Chemistry, Vanderbilt University

TAS/TSTA LUNCHEON and PLENARY PRESENTATION

“Teaching Good Science in Middle School”

11:00-12:30, Tulip Grove Ballroom

Dr. Rick Vanosdall, Director

Tennessee Math, Science and Technology Education Center

Middle Tennessee State University

Dr. Frederick “Rick” Vanosdall, one of the authors of “Teaching Good Science in Middle School”, joined MTSU’s College of Basic and Applied Sciences faculty July 11 as director of the Tennessee Mathematics, Science and Technology Education Center. He previously served as a member of Tennessee State University’s faculty since 2005. As director of TSU’s Center of Excellence for Learning Sciences, he developed and led the implementation of an array of research and service efforts within the center and among academic and research divisions at TSU in areas such as early childhood education, P-16 teacher development and student achievement, undergraduate pedagogical and curriculum reform efforts, and education research and policy efforts at the local, state and national levels, among other areas.

Before his move to Tennessee, he was an assessment, curriculum and instruction specialist with the Mesa Public Schools in Mesa, Ariz., and as associate director for research at Northern Arizona University’s Arizona K-12 Center, a statewide school and academic improvement organization. Vanosdall also worked as a lead science teacher for the Mesa Public Schools system at Red Mountain High School for 11 years and at Mountain View High School for four years, as well as an outdoor education instructor in Michigan for two years in Michigan. In addition to numerous professional activities and affiliations, he was one of 40 North American recipients of the David L. Clark Research Award in Educational Leadership from the University Council for Educational Administration in ’03 and one of 22 chosen from eight countries to receive an Intel Science Teacher Award. Dr. Vanosdall received a Bachelor of Science degree in natural resource and environmental education from Michigan State University and a master’s degree in educational administration and supervision from Arizona State University. He earned his Doctor of Education degree in ’04 from ASU. Dr. Vanosdall is married and his wife Kim is a high-school teacher in Williamson County. They make their home near Spring Hill with son Grant, who will be a freshman at MTSU in the fall, and daughter Wesley, who will be a high-school junior.

TAS BUSINESS MEETING

Saturday 8:00-9:00, Evergreen Room

Dr. Cindy Smith-Walters, 2008 TAS President, Presiding

FIELD TRIP to RADNOR LAKE STATE NATURAL AREA

Saturday 9:00-1:00

Dr. Robert Loeb, Pennsylvania State University, Leader

A guided hike and tour of Radnor Lake including overviews of current research and management projects on vegetation control, invasive species and water quality.

Sign-up at Registration Desk; meet in hotel lobby. Transportation provided but limited, car-pooling encouraged.

BOTANY
Friday 1:00, McGavock C Room
Joey Shaw, presiding
The University of Tennessee at Chattanooga

- 1:00 SECTION BUSINESS MEETING: ELECTION OF OFFICERS FOR 2009
- 1:15 THE COMPLETE CHLOROPLAST GENOME OF TALL FESCUE (*FESTUCA ARUNDINACEA*) AND THE COMPARISON OF WHOLE PLASTOMES FROM THE FAMILY POACEAE. **A. Bruce Cahoon, Anhua Linn, Chansemone Mysayponh*, Richard M. Sharpe*, Elizabeth J. Thompson*, Andrea D. Ward***, Middle Tennessee State University, Murfreesboro, Tennessee
- 1:30 SURVEY AND DNA BARCODING OF GRASS SPECIES IN FLAT ROCK CEDAR GLADES AND BARRENS STATE NATURAL AREA, MURFREESBORO, TENNESSEE. , **Abby M. Drumwright*, Brian W. Allen*, A. Bruce Cahoon** Middle Tennessee State University, Murfreesboro, Tennessee.
- 1:45 THE POPULATION GENETICS OF THE RARE PLANT *ARABIS PERSTELLATA*. **Nacole Clutter*and Carol J. Baskauf.** Austin Peay State University, Clarksville, Tennessee
- 2:00 DISJUNCT POPULATIONS OF *CLEMATIS FREMONTII* IN TENNESSEE AND GEORGIA: RECENT INTRODUCTIONS OR RELICT POPULATIONS? **Meredith Montgomery*, Joey Shaw,** University of Tennessee at Chattanooga, Chattanooga, Tennessee (MM, JS).
- 2:15 PHYLOGEOGRAPHY OF NORTH AMERICAN CASTANEA. **Meagan Binkley*, Hill Craddock, and Joey Shaw,** The University of Tennessee at Chattanooga, Chattanooga, Tennessee.
- 2:30 THE WOODY FLORA OF LAND BETWEEN THE LAKES, KENTUCKY AND TENNESSEE: A THIRTY YEAR UPDATE. **Edward W. Chester,** Austin Peay State University, Clarksville, Tennessee.
- 2:45 THE VASCULAR FLORA OF TENNESSEE PROJECT. **Dwayne Estes, Joey Shaw, Edward W. Chester, B. Eugene Wofford, and Claude Bailey, Jr.** Austin Peay State University, Clarksville, Tennessee (DE, EWC), University of Tennessee Chattanooga (JS), University of Tennessee Knoxville (BEW), Jackson State Community College (CB).
- 3:00 Break
- 3:15 INFLUENCE OF THE SEED BANK COMPOSITION ON THE DIVERSITY OF PLANTS COMMUNITIES WITHIN SOUTHERN APPALACHIAN MONTANE WETLANDS. **Mark McIntosh* and Christy Carter,** Tennessee Technological University, Cookeville, Tennessee.
- 3:30 LONG TERM FOREST CHANGE IN RADNOR LAKE NATURAL AREA **Jesse Germeraad*, Paige Griffin*, Robert Loeb, and Steven Ward,** Lipscomb University, Nashville, Tennessee (JG, PG), Pennsylvania State University, DuBois Campus, DuBois, Pennsylvania, (RL), and Radnor Lake Natural Area, Nashville, Tennessee (SW)
- 3:45 VIBURNUM BRACTEATUM (ADOXACEAE) EXPANDED TO INCLUDE V. OZARKENSE. **Dwayne Estes,** Austin Peay State University, Clarksville, Tennessee
- 4:00 HABITAT MAPPING OF *CASTANEA DENTATA* AT MAMMOTH CAVE NATIONAL PARK. **S. Fei, , J. Schibig#, and M. Vance*,** University of Kentucky, Lexington, Kentucky, Volunteer State Community College, and Tennessee Technological University.

- 4:15 PRODUCING MARKETABLE ZINNIAS (*ZINNIA ELEGANS*) USING SALINE WASTEWATER. **Christy T. Carter**, *Tennessee Tech University, Cookeville, Tennessee*
- 4:30 THE EFFECTS OF SHOOT HARVEST DATE AND AUXIN CONCENTRATIONS IN THE PROPAGATION OF 'CYNTHIANA / NORTON' GRAPES (*VITIS AESTIVALIS*). **Nathan C. Phillips, Benjamin J. Kelly***, and **Tony Johnston**. *Middle Tennessee State University, Murfreesboro, Tennessee*
- 4:45 EVALUATING THE EFFECTS OF AN ASIAN ORIGINATED BIO-EXTRACT ON TWO VEGETABLE CROPS (*BRASSICA OLERACEA* AND *PHASEOLUS VULGARIS*) IN MIDDLE TENNESSEE. **Aaron Shew***, and **Nathan C. Phillips**. *Middle Tennessee State University, Murfreesboro, Tennessee.*
- 5:00 TAXONOMY AND ECOLOGY OF A NEW SPECIES OF *LYSIMACHIA* FROM CENTRAL TENNESSEE. **Tianita Duke*** and **Dwayne Estes**. *Austin Peay State University, Clarksville, Tennessee.*

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presenting author, if not first author

**CELL and MOLECULAR BIOLOGY (C&M)
MICROBIOLOGY (MICRO)
HEALTH AND MEDICAL SCIENCES (H&M)**

Friday 1:00, Evergreen Room

Michael W. Thompson, Middle Tennessee State University presiding (C&M)

Perry M. Scanlan, Austin Peay State University, presiding (MICRO)

J. Michael Redding, Tennessee Technological University (H&M), presiding

- 1:00 SECTION BUSINESS MEETING: ELECTION OF OFFICERS FOR 2009
- 1:15 OPTIMIZATION OF AN ENZYME IMMUNOASSAY FOR THE DETECTION OF GONADOTROPIN-RELEASING HORMONE. *Maryam Farsian* and Gilbert R. Pitts, Austin Peay State University, Clarksville, Tennessee. (C&M)*
- 1:30 ACRIDONES CIRCUMVENT P-GLYCOPROTEIN-ASSOCIATED MULTIDRUG RESISTANCE (MDR) IN CANCER CELLS. *Kuntebommanahalli Thimmaiah, Augustinus Rinaldy, Larry Sylvester, Harold Simmons, Paul Grisham, Ray Cox and Peter Houghton, Northwest Mississippi Community College, DeSoto Center, Southaven, Mississippi (KT, AR, LS, HS, PG, RC) and St. Jude Children's Research Hospital, Memphis, Tennessee (KT, PH). (C&M)*
- 1:45 MAIZE BS & MSC CHLOROPLASTS: SAME GENES DIFERENT BS. *Richard M. Sharpe*, A. Bruce Cahoon, Middle Tennessee State University, Murfreesboro, Tennessee. (C&M)*
- 2:00 MEMBRANE DISTRIBUTION OF A MATING RECEPTOR (STE2P) IN ERGOSTEROL AND SPHINGOLIPID DEFICIENT MUTANTS OF BREWER'S YEAST (SACCHAROMYCES CEREVISIAE). *Katherine Smith*, Jessica Ward*, and D. Grant Willhite, Tennessee Wesleyan College, Athens, Tennessee. (C&M)*
- 2:15 ARGINYL AMINOPEPTIDASE-LIKE 1 (RNPEPL1) IS AN ALTERNATIVELY SPLICED NEUTRAL AMINOPEPTIDASE WITH SPECIFICITY FOR CITRULLINE, METHIONINE, AND GLUTAMINE RESIDUES. *Karen A. Beasley*, Michael W. Thompson, and Rebecca L. Seipelt, Middle Tennessee State University, Murfreesboro, Tennessee. (C&M)*
- 2:30 APPLICATION OF EPITOPE PEPTIDE AND SPACER MOLECULE FOR THE DIAGNOSIS OF TUBERCULOSIS. *Sylvia Gan*, Kuntebommanahalli Thimmaiah, Larry Sylvester, Harold Simmons, Paul Grisham, Ray Cox, James Henry, Klaus Gregorius and Augustinus Rinaldy, Northwest Mississippi Community College, DeSoto Center, Southaven, Mississippi (AR, KT, LS, HS, PG, RC), ImmunoCon Diagnostic, Memphis, Tennessee (JH, KG, AR), and Innogene Kalbiotech, Singapore (SG, AR). (MICRO)*
- 2:45 COMPARATIVE STUDY OF SEXUALLY TRANSMITTED DISEASES IN EAST TENNESSEE, U.S.A., MANCHESTER, U.K., and SRI LANKA. *Chasity Danielle Long* and Eugene de Silva, Lincoln Memorial University, Harrogate, Tennessee. (MICRO)*
- 3:00 BREAK
- 3:15 HOW TO BUILD A BETTER MOUSE TRAP: SANITATION ISSUES IN THE FOOD MICROBIOLOGY INDUSTRY. *Gina M. Cullerton* and John M. Zamora, Middle Tennessee State University, Murfreesboro, Tennessee. (MICRO)*
- 3:30 DETERMINATION OF FORMALDEHYDE LEVELS IN REGIONS OF THE MURFREESBORO, TENNESSEE WATERSHED AND AN INVESTIGATION INTO POSSIBLE FORMALDEHYDE-

- RESISTANCE EXPRESSED BY SELECT MICROORGANISMS. **J. Clay Kennedy*** and **John M. Zamora**, Middle Tennessee State University, Murfreesboro, Tennessee. (MICRO)
- 3: 45 THE CHARACTERIZATION OF A NOVEL BACTERIAL PATHOGEN ISOLATED FROM A HOT TUB. **David W. Olsen***, **Sharon G. Berk**, **Anthony L. Farone**, and **Mary B. Farone**, Middle Tennessee State University, Murfreesboro, Tennessee (DWO, ALF, MBF) and Tennessee Technological University, Cookeville, Tennessee (SGB). (MICRO)
- 4:00 GENETIC ANALYSIS OF BORRELIA BURGENDORFERI ISOLATES FOUND IN MIDDLE TENNESSEE. **Jillian Kay***, **Sean Peterson**, and **Chad Brooks** Austin Peay State University, Clarksville, Tennessee . (MICRO)
- 4:15 CELLULOSE-DEGRADING MICROORGANISMS. **Robert J. P. Newby*** and **John M. Zamora**, Middle Tennessee State University, Murfreesboro, Tennessee. (MICRO)
- 4:30 THE EFFECT OF INEBRIETY VS. ASPIRIN ON PAIN PERCEPTION. **Justin B. Patel*** and **Eugene de Silva**, Lincoln Memorial University, Harrogate, Tennessee. (H&M)
- 4:45 PRELIMINARY DATA DESCRIBING A NOVEL ANTIMICROBIAL AGENT TO COMBAT MRSA INFECTIONS. **Christina Russell***, **Jessica Matheson** and **Chad Brooks**, Austin Peay State University, Clarksville, Tennessee. (H&M)
- 5:00 A QUANTITATIVE MEASURE OF OBESITY DISPARITIES ASSOCIATED WITH INCOME DIFFERENCES AMONG ETHNIC GROUPS. **Eleanor K. Jator**, Austin Peay State University, Clarksville, Tennessee. (H&M)
- 5:15 IMPLICATIONS FOR PERSONS WITH HYPERTENSION RELATIVE TO THE LACK OF A FEDERAL MANDATE FOR SODIUM (SALT) CONTENT OF VARIOUS FOOD PRODUCTS SOLD IN THE UNITED STATES. **Martha W. Stratton**, Tennessee State University, Nashville, Tennessee. (H&M)

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CHEMISTRY
Friday 1:00, Room 1081
Daniel J. Swartling, Tennessee Technological University, presiding

- 1:00 SECTION BUSINESS MEETING: ELECTION OF OFFICERS FOR 2009
- 1:15 HARTREE-FOCK STRUCTURES OF SEVERAL ORGANOSILYLMAGNESIUM FLUORIDE DIMERS AND THEIR ADDUCTS. *W. Ilsley, Middle Tennessee State University, Murfreesboro, Tennessee.*
- 1:30 TITANIUM PHOSPHATE/PBI COMPOSITE MEMBRANES IN PROTON EXCHANGE MEMBRANE FUEL CELLS. *Marshall McDonnell* and Roy Wilcox, Lincoln Memorial University, Harrogate, Tennessee.*
- 1:45 DISCOVERY CHEMISTRY BY UNDERGRADUATE AND MASTER'S LEVEL STUDENTS AT TENNESSEE STATE UNIVERSITY. *Mohammad Al-Masum, Tennessee State University, Nashville, Tennessee.*
- 2:00 ENERGY CONTENT OF HURRICANE IKE. *Earl Pearson, Middle Tennessee State University, Murfreesboro, Tennessee.*
- 2:15 SOL-GEL SYNTHESIS OF PbS/SiO₂, PbSe/SiO₂, AND PbTe/SiO₂ NANOCOMPOSITES. *P. Bajaj*, T.P. Marsh*, and J.T. Moore#, Tennessee State University, Nashville, Tennessee.*
- 2:30 ROTATIONAL HYDRODYNAMIC DIFFUSION DEVICE FOR MASS TRANSPORT ANALYSIS ACROSS POROUS INTERFACES. *Sai Sree Mamidi*, Bo Meas*, Tarek R Farhat#, University of Memphis, Memphis, Tennessee.*
- 2:45 THE CHEMISTRY OF GRITS (GIRLS RAISED IN TENNESSEE SCIENCE). *J.M. Iriarte-Gross, L. S. Fleming# and C. DeSheles*, Middle Tennessee State University, Murfreesboro, Tennessee.*
- 3:00 WISE CHEMISTRY. *J.M. Iriarte-Gross, C. DeSheles*#, A. Schaible *#, Middle Tennessee State University, Murfreesboro, Tennessee.*

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**ENGINEERING and ENGINEERING TECHNOLOGY (E&ET)
PHYSICS and ASTRONOMY (P&A)**

Friday 1:00, Room 1094

**Ismail Fidan, Tennessee Technological University, presiding (E&ET)
Eugene de Silva, Lincoln Memorial University, presiding (P&A)**

- 1:00 SECTION BUSINESS MEETING: ELECTION OF OFFICERS FOR 2009
- 1:15 A COMPARATIVE STUDY OF THE VELOCITIES AND KINETIC ENERGIES OF FOUR DIFFERENT ARROW AND FOUR TIP COMBINATIONS. *Sheryl Hill* and Eugene de Silva, Lincoln Memorial University, Harrogate, Tennessee. (P&A)*
- 1:30 A COMPARATIVE STUDY OF OBESITY AND ANIMAL MOVEMENTS. *Hannah DeBusk* and Eugene de Silva, Lincoln Memorial University, Harrogate, Tennessee. (P&A)*
- 1:45 A REVIEW OF OSTEPATHIC MANIPULATION AMONG WESTERN PHYSICIANS AND EASTERN INDEGENOUS PRACTITIONERS. *Chasity Long*, Eugene de Silva, and Howard Teitelbaum, Lincoln Memorial University, Harrogate, Tennessee. (P&A)*
- 2:00 APPLICATION OF BIOMECHANICS TO IMPROVE THE REVERSE PUNCH. *Alexander Basiri* and Eugene de Silva, Lincoln Memorial University, Harrogate, Tennessee. (P&A)*
- 2:15 ANALYSIS OF THE 2006 PACIFIC OCEAN TSUNAMI USING TWO-DIMENSIONAL MODELS ON FLAT AND SPHERICAL SURFACES. *Arjun Tan, Sonya Lyatskaya, and Matthew E. Edwards, Alabama Agricultural and Mechanical University, Normal, Alabama. (P&A)*
- 2:30 ANALYSIS OF THE 2004 INDIAN OCEAN TSUNAMI USING A FINITE LINE SOURCE MODEL. *Arjun Tan, Sonya Lyatskaya, and Matthew E. Edwards, Alabama Agricultural and Mechanical University, Normal, Alabama. (P&A)*
- 2:45 BREAK
- 3:00 UNDERSTANDING THE PHYSICS BEHIND THE PERFORMANCE OF ROPING HORSES *Tessa Garrett* and Eugene de Silva, Lincoln Memorial University, Harrogate, Tennessee. (P&A)*
- 3:15 AN ANALYSIS OF HARMONIC FREQUENCIES IN WIND INSTRUMENTS. *Jackie Martindale* and Eugene de Silva, Lincoln Memorial University, Harrogate, Tennessee. (P&A)*
- 3:45 DEVELOPMENT OF A SOFTWARE MODEL TO STUDY THE DEPOSITION OF ALUMINUM NITRIDE IN INTENSIFIED PLASMA ASSISTED PROCESSING. *Marshall McDonnell*, Matthew Sweet*, and Eugene de Silva, Lincoln Memorial University, Harrogate, Tennessee. (P&A)*
- 4:00 CEREBROVASCULAR AUTOREGULATION: FUNCTIONAL MODEL DESCRIPTION OF ELECTRICAL COMMUNICATION BETWEEN SMOOTH MUSCLE CELL AND ENDOTHELIAL CELL. *Nithya Narayanan*, Charles W. Leffler, and Michael L. Daley, The University of Memphis, Memphis, Tennessee (NN, MLD), and The University of Tennessee Health Sciences Center, Memphis, Tennessee (CWL). (E&ET)*
- 4:15 THE INFLUENCE OF LOAD FREQUENCY ON BIOMECHANICAL PARAMETERS OF A MODEL OF A KYPHOPLASTY-AUGMENTED LUMBAR SPINE SEGMENT. *Yuan Li*, Gladius Lewis, The University of Memphis, Memphis, Tennessee. (E&ET)*

4:30 ENHANCED DISTANCE-STUDENT LEARNING VIA REMOTE LABORATORY PRACTICES.
Ismail Fidan, Tennessee Technological University, Cookeville, Tennessee. (E&ET)

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**GEOLOGY and GEOGRAPHY
ZOOLOGY**

Friday 1:00, General Thomas Room

**Peter Li, Tennessee Technological University presiding (G&G)
Gilbert Pitts, Austin Peay State University, presiding (ZOO)**

- 1:00 SECTION BUSINESS MEETING: ELECTION OF OFFICERS FOR 2009
- 1:15 SPATIAL MODELING SINKHOLE FLOODING ANALYSIS AND MANAGEMENT SYSTEM, *Derrick Ho* and Peter Li, Tennessee Technological University, Cookeville, Tennessee (DH, PL). (G&G)*
- 1:30 AN APPLICATION OF GIS ON THE DISTRIBUTION OF FOSTER HOMES IN THE UPPER CUMBERLAND REGION, *Whitney M. Fuquay* and Peter Li, Tennessee Technological University, Cookeville, Tennessee (WMF, PL). (G&G)*
- 1:45 TORNADO ALLEYS IN TENNESSEE? A GEOGRAPHIC ANALYSIS OF EXTREME TORNADOES IN TENNESSEE, *Robert M. Simpson, University of Tennessee at Martin, Martin, Tennessee. (G&G)*
- 2:00 ANALYSIS OF EMERGING POLLUTANTS - 17 β ESTRODIOL AND TESTOSTERONE IN MUNICIPAL WASTEWATER EFFLUENT, SURFACE WATER AND DRINKING WATER USING IMMUNOSORBENT ASSAY KITS. *Richard C. Lee, Tammy Tu, and Peter Li[#], Stanford University, Stanford, California(RCL), Cookeville High School, Cookeville, Tennessee (TT), Tennessee Technological University, Cookeville, Tennessee (PL). (G&G)*
- 2:15 BREAK
- 2:30 DEVELOPMENT OF A DNA CAPTURE SYSTEM FOR THE DETECTION OF *BATRACHOCHYTRIUM DENDROBATIDIS* FROM INFECTED FROG TISSUES. *David Henley* and Chad Brooks, Austin Peay State University, Clarksville, Tennessee. (ZOO)*
- 2:45 EFFECTS OF NEST TUBE ARRANGEMENT ON RATE OF USE BY CAROLINA CHICKADEES. *T. David Pitts, University of Tennessee at Martin, Martin, Tennessee. (ZOO)*
- 3:00 DIFFERENTIAL USE OF CAVE CHAMBERS BY EASTERN PIPISTRELLE, *PERIMYOTIS SUBFLAVUS*, DURING TORPOR AND PRIOR TO MATERNAL ROOST FORMATION. *Riley Seth McCormick*, Morgan E. Kurz, and Andrew N. Barrass, The Center of Excellence for Field Biology, Austin Peay State University, Clarksville, Tennessee. (ZOO)*
- 3:15 FERAL CATS AS A PRIMARY PREDATOR OF BAT SPECIES. *Morgan Kurz*, Riley McCormick, and Andrew Barrass, Austin Peay State University, Clarksville, Tennessee. (ZOO)*
- 3:30 BIOASSESSMENT OF WATER QUALITY IN PLEASANT GROVE CREEK, LOGAN COUNTY KENTUCKY. *Joseph R. Schiller, Steven W. Hamilton, Jamie J. Miller*, and Amanda Whitley*, Austin Peay State University, Clarksville, Tennessee. (ZOO)*
- 3:45 ASSESSING FISH POPULATIONS IN AN AGRICULTURALLY IMPACTED STREAM USING THE KENTUCKY INDEX OF BIOTIC INTEGRITY, PLEASANT GROVE CREEK, LOGAN COUNTY, KENTUCKY. *Dereck L. Eison* and Andrew N. Barrass, The Center of Excellence for Field Biology, Austin Peay State University, Clarksville, Tennessee. (ZOO)*

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presenting author, if not first author

HISTORY of SCIENCE
Saturday 8:00, Room 1081
James X. Corgan, *Austin Peay State University, Emeritus, presiding*

- 8:00 SECTION BUSINESS MEETING: ELECTION OF OFFICERS FOR 2009
- 8:15 SECONDARY SCHOOL SCIENCE AND THE TENNESSEE ACADEMY: 1912-2008. **James X. Corgan**, *Austin Peay State University, Clarksville, Tennessee.*
- 8:30 THE TENNESSEE JUNIOR ACADEMY OF SCIENCE: PAST, PRESENT, AND POTENTIAL FOR THE FUTURE. **Jack Rhoton**, *East Tennessee State University, Johnson City, Tennessee.*
- 8:45 VISITING SCIENTIST PROGRAM: PAST AND FUTURE. **Michael L. Daley**, *The University of Memphis, Memphis, Tennessee.*
- 9:00 USING HISTORY IN THE SCIENCE CLASSROOM: IDEAS FROM THE TENNESSEE SCIENCE FRAMEWORK. **George Webb**, *Tennessee Technological University, Cookeville, Tennessee.*
- 9:15 KEPLER/S METHOD OF DETERMING THE INCLINATION OF MARS ORIBITAL PLANE. **Brother Kevin Ryan**, *Christian Brothers University, Memphis, Tennessee.*
- 9:30 FAMOUS BIOLOGISTS OF THE PAST IN UNIVERSITY TEXTBOOKS. **David B. Ekkens**, *Southern Adventist University, Collegedale, Tennessee.*
- 9:45 CHARLES SCHUCHERT AND CARL DUNBAR IN TENNESSEE. **M. A. Gibson**, *University of Tennessee at Martin, Martin, Tennessee.*
- 10:00 THE RED BOILING SPRINGS FLOOD OF JUNE 23, 1969. **Mark A. Rose**, *National Weather Service, Old Hickory, Tennessee.*
- 10:15 THE CREATION OF ERNEST LAWRENCES'S CYCLOTRON. **Lisa Bovee***, *Indiana University, Bloomington, Indiana.*

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presenting author, if not first author

MATH and COMPUTER SCIENCE
Saturday 7:50, Evergreen Room
B. Ntatin, Austin Peay State University, presiding

- 7:50 SECTION BUSINESS MEETING: ELECTION OF OFFICERS FOR 2009
- 8:00 SOLVING THIRD ORDER ORDINARY DIFFERENTIAL EQUATIONS BY BOUNDARY VALUE METHODS. **Robert French D., Michael C. Northington, and Samuel Jator**, *Austin Peay State University, Clarksville, Tennessee.*
- 8:15 INITIAL VALUE METHODS FOR TWO-POINT BOUNDARY VALUE PROBLEMS. **Kimberly L. Anderson*, Jennifer Jones*, and Samuel Jator**, *Austin Peay State University, Clarksville, Tennessee.*
- 8:30 A BLOCK METHOD FOR SECOND ORDER INITIAL VALUE PROBLEMS. **Zachary D. Hodge*, Scott Swindell*, and Samuel N. Jator**, *Austin Peay State University, Clarksville, Tennessee.*
- 8:45 A BOUNDARY VALUE APPROCH FOR THE SOLUTION OF FOURTH ORDER ORDINARY DIFFERENTIAL EQUATIONS. **Cameron Druyor* and Samuel Jator**, *Austin Peay State University, Clarksville, Tennessee.*
- 9:00 SOLUTION OF BLASIUS EQUATION BY DECOMPOSITION. **Arjuna Ranasinghe and Fayequa Majid**, *Alabama A & M University, Normal, Alabama (AR, FM).*
- 9:15 COMPARING NUMERICAL METHODS FOR SOLVING LOTKA VOLTERRA EQUATIONS. **Ramanjit K. Sahi**, *Austin Peay State University, Clarksville, Tennessee.*
- 9:30 Multiple Nonlinear Volterra Integral Equations: Some Analytical Results. **Yuriy Bulka**, *Austin Peay State University, Clarksville, Tennessee.*
- 9:45 A COMPUTER SIMULATION OF LAND MANAGEMENT OPTIONS WITH DOMESTIC AND GLOBAL FOOD AND FUEL SHORTAGE. **D. Otts and W. Anderson**, *Middle Tennessee State University, Murfreesboro, Tennessee.*
- 10:00 INITIALIZATION OF PEER-TO-PEER SYSTEMS OVER COMPUTATIONAL GRIDS. **Wei Ding**, *Austin Peay State University, Clarksville, Tennessee.*
- 10:15 ASYMPTOTIC PROPERTIES OF MAXIMUM LIKELIHOOD ESTIMATORS FOR SPATIAL NON-HOMOGENEOUS POISSON POINT PROCESSES. **Han Wu, Yan Zhao, and Mark S. Kaiser**, *Austin Peay State University, Clarksville, Tennessee; Lilly Corporate Center, DC 6054, Indianapolis, Indiana; Iowa State University, Ames, Iowa.*
- 10:30 REGRESSION ANALYSES FOR TRACK AND FIELD ATHLETICS IN OLYMPICS. **Arjun Tan, Sonya Lyatskaya, and Curtis L. Jordan**, *Alabama Agricultural and Mechanical University, Normal, Alabama.*
- 10:45 COEFFICIENT BOUNDS FOR A NEW SUBCLASS OF UNIVALENT FUNCTIONS. **B. Ntatin**, *Austin Peay State University, Clarksville, Tennessee.*

* student author

presenting author, if not first author

SCIENCE and MATH TEACHING
Saturday 8:00 , McGavock Room
Lori L. McGrew, Belmont University, presiding

- 8:00 SECTION BUSINESS MEETING: ELECTION OF OFFICERS FOR 2009
- 8:15 DISCOVERY CHEMISTRY BY UNDERGRADUATE & MASTER'S LEVEL STUDENT AT TENNESSEE STATE UNIVERSITY. **Mohammad Al-Masum** *Tennessee State University, Nashville, Tennessee.*
- 8:30 WHAT DO DOLLS AND BEES HAVE TO DO WITH TEACHING AND LEARNING CHEMISTRY? **Flora Setayesh**, *Nashville State Community College, Nashville, Tennessee.*
- 8:45 TEACHING WITHOUT LECTURING IN UPPER-LEVEL BIOLOGY COURSES. **Jennifer T. Thomas**, *Belmont University, Nashville, Tennessee.*
- 9:00 GETTING THE MOST OUT OF FIELD LABS: GOING BEYOND A SIMPLE MARK-RECAPTURE EXERCISE. **John Niedzwiecki**, *Belmont University, Nashville, Tennessee.*
- 9:15 STORM CHASERS: THE EEC PROJECT AND THE GATHERING STORM. **Leigh Gostowski, Kim Sadler, and Linda Gilbert**, *Middle Tennessee State University, Murfreesboro, Tennessee*
- 9:30 COMBATING MATHOPHOBIA: DEALING WITH EXPONENTS. **Harold A. Simmons and Randall Warren**, *Northwest Community College, Southaven, Mississippi.*
- 9:45 UNIVERSITY/HIGH SCHOOL COLLABORATION TO BUILD AND LAUNCH A ROBOTIC ROVER VEHICLE. **Rudy Gostowski and Kent Wallace**, *NASA-Marshall Space Flight Center/Fisk University, Huntsville, Alabama/Nashville, Tennessee and Fisk University, Nashville, Tennessee.*
- 10:00 UNDERSTANDING THE PERCEPTION OF CHEMISTRY UNDERGRADUATES TO INCREASE THE NUMBER OF LEARNERS – A COMPARATIVE STUDY. **Chasity Long* and Eugene de Silva**, *Lincoln Memorial University, Harrogate, Tennessee.*

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POSTERS ON DISPLAY

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BOTANY

COMPARISON OF PHOTOSYNTHESIS AND TRANSPIRATION RATES IN *LONICERA MAACKII* AND *SYMPHORICARPOS ORBICULATUS* IN RESPONSE TO ENVIRONMENTAL FACTORS. **April Tummins*** and **A. Darlene Panvini**, *Belmont University, Nashville, Tennessee.*

DIURNAL DIFFERENCES IN PHOTOSYNTHESIS IN *LONICERA MAACKII* AND *LONICERA JAPONICA* IN SUN AND SHADE ENVIRONMENTS. **Alex Hughes*** and **A. Darlene Panvini**, *Belmont University, Nashville, Tennessee.*

DEVELOPMENT OF INTER-SIMPLE SEQUENCE REPEAT MARKERS (ISSR) FOR DETERMINATION OF GENETIC DIVERSITY IN DALEA SPECIES. **Jacob Wadlington***, **Benjamin Bailey***, and **Mary Sledge**, *Lipscomb University, Nashville, Tennessee.*

PRELIMINARY FLORA OF SEQUATCHIE VALLEY IN SEQUATCHIE COUNTY, TN. **John Evans***, **Joey Shaw**, *University of Tennessee at Chattanooga, Chattanooga, Tennessee (JE, JS).*

CELL AND MOLECULAR BIOLOGY

EFFECT OF CHOLESTEROL CONCENTRATION ON LYSOSMAL BIOGENESIS. **Aditya P. Mahajan***, **Patrick W. Jennings***, **A. Bruce Cahoon**, **Jerry W. Reagan**, *Middle Tennessee State University, Murfreesboro, Tennessee.*

CHARACTERIZATION OF THE TNXB GENE IN ZEBRAFISH. **M. Reece Cofer*** and **Ethan A. Carver**, *University of Tennessee at Chattanooga, Chattanooga, Tennessee.*

BLOCKING THE EFFECTS OF 6-OHDA IN CAENORHABDITIS ELEGANS. **Brittany Myers*** and **Nick Ragsdale**, *Belmont University, Nashville, Tennessee.*

THE EFFECTS OF SULPIRIDE, SCH23390 AND DIHYDREXIDINE HCL 6-OHDA TREATED CAENORHABDITIS ELEGANS. **Robert Gibson*** and **Nick Ragsdale**, *Belmont University, Nashville, Tennessee.*

DEVELOPMENT OF A DNA-CAPTURE SYSTEM FOR THE ENHANCEMENT OF DNA-BASED ASSAYS. **Marc Smith*** and **Chad Brooks**, *Austin Peay State University, Clarksville, Tennessee.*

CHEMISTRY

OPTIMIZING THE PERFORMANCE OF A WATER ASPIRATOR AT LOW WATER PRESSURES. **Jeanell B. Riffle*** and **Martin V. Stewart**, *Middle Tennessee State University, Murfreesboro, Tennessee.*

ENCOURAGING GIRLS IN CHEMISTRY THROUGH EYH HANDS-ON WORKSHOPS. **J.M. Iriarte-Gross**, **L. S. Fleming**, **J. Ilsley*#**, **A. Cowart*#** *Middle Tennessee State University, Murphressboro, Tennessee.*

FURTHER INVESTIGATION INTO THE KNOEVENAGEL COUPLING OF ALDEHYDES AND KETONES TO MELDRUM'S ACID, *Casey McCormick, Dan Roubik, and Dan Swartling, Tennessee Tech University, Cookeville, Tennessee.*

THE DEVELOPMENT OF AN IMPROVED ACTIVITY ASSAY FOR THE RAPID ASSESSMENT OF CONDITIONS SOUGHT TO ENHANCE CATALYTIC ACTIVITY IN THE PRODUCTION OF BIOFUELS FROM CELLULOSIC FEEDSTOCKS, *Jessika Pinto* and Jeffrey O. Boles, Tennessee Technological University, Cookeville, Tennessee.*

ANALYSIS OF PRODUCT INHIBITION AND STABILITY OF CELLULASE FROM *ASPERGILLUS.NIGER*, *Jami Couch* and Jeffrey O. Boles, Department of Chemistry, Tennessee Technological University, Cookeville, Tennessee.*

GEOLOGY AND GEOGRAPHY

STREAM MORPHOLOGY IN A KARSTIFIED DRAINAGE BASIN, *Tabetha J. Scott*, and Hugh Mills, Tennessee Technological University, Cookeville, Tennessee (TJS, HM).*

ANALYSIS OF ENROLLMENT SCENARIOS OF AFRICAN AMERICAN STUDENTS AT TTU, *Allison M. Hood*, and Peter Li, Tennessee Technological University, Cookeville, Tennessee (AMH, PL).*

EXCITING MINERAL FIND AT NONCONNAH CREEK, MEMPHIS, TENNESSEE, *Marvin Nutt* and George Swihart, The University of Memphis, Memphis, Tennessee.*

OBSERVATIONS ON THE SAND ISLAND – DAUPHIN ISLAND CONNECTION 2008, *W. Nathan Campell* A.K. Killingsworth*, C. Shankles*, C.E. Coleman*, S. Bridge*, H.C. Juedes*, W.D. Bone*, R. Shiplett*, and M.A. Gibson, Auburn University, Auburn, Alabama (WNC), University of Tennessee at Martin, Martin, Tennessee (CEC, MAG), University of Alabama, Tuscaloosa, Alabama (AKK, CS, SB, HCJ, WDB) and Dauphin Island Sea Lab, Dauphin Island, Alabama (RS).*

HEALTH AND MEDICAL SCIENCES

THE PRODUCTION, QUANTIFICATION AND FLUORESCENT DETECTION OF ANTHRAX-SIMULATING ENDOSPORES. *Merranda D. Holmes* and Stephen M. Wright, Middle Tennessee State University, Murfreesboro, Tennessee.*

PREDATION AMONG *ANOPHELES GAMBIAE* S.S. AND *CULEX QUINQUEFASCIATUS* LARVAE. *Shannon Murphy*, Ephantus J. Muturi, Chang-Hyun Kim, and Robert J. Novak, Middle Tennessee State University, Murfreesboro, Tennessee (SM), and University of Alabama at Birmingham, Birmingham, Alabama (EJM, CK, RJN).*

MATH and COMPUTER SCIENCE

BETWEEN THE DEVIL AND THE DEEP(ER) BLUE SEA: FLORIDA'S PRECARIOUS POSITION AS A RESULT OF SEA LEVEL RISE. *Matt Perry*, Amy Valentine*, Nikki Finuf*, Belmont University, Nashville, Tennessee.*

MICROBIOLOGY

TOXICITY AND DEGRADATION OF SEVIN-10 INSECTICIDE. *Eterial Burrell* and John M. Zamora, Middle Tennessee State University, Murfreesboro, Tennessee.*

A COMPARISON OF THE ANTIMICROBIAL ACTIVITY OF NATURAL AND COMMERCIAL DISINFECTANTS. *Payal L. Gupta *, Mohammed S. Mahmood* and John M. Zamora, Middle Tennessee State University, Murfreesboro, Tennessee.*

BIODIESEL GENERATION FROM CO₂ BY MICROALGAE USING SOLAR LIGHT AS AN ENERGY SOURCE. *Dawn Bio* and Sergei A. Markov, Austin Peay State University, Clarksville, Tennessee .*

THE ISOLATION AND VIRULENCE CHARACTERIZATION OF STAPHYLOCOCCUS AUREUS ISOLATES FROM ENVIRONMENTAL SOURCES. *Jeremy D. Friesen* and Mary B. Farone, Middle Tennessee State University, Murfreesboro, Tennessee.*

EVALUATING THE ANTIMICROBIAL ACTIVITY OF MELITTIN AGAINST SEVERAL BACTERIA. *Jessica Matheson* and Chad Brooks, Austin Peay State University, Clarksville, Tennessee.*

PRESENCE OF *mecA* GENE IN METHICILLIN-RESISTANT ISOLATES OF *STAPHYLOCOCCUS AUREUS*. *Anna L. Walsh* and Jennifer T. Thomas, Belmont University, Nashville, Tennessee.*

PRESENCE OF PANTON-VALENTINE LEUKOCIDIN IN COMMUNITY ASSOCIATED METHICILLIN-RESISTANT *STAPHYLOCOCCUS AUREUS* ISOLATES ON BELMONT UNIVERSITY'S CAMPUS. *Brittany Moe* and Jennifer T. Thomas, Belmont University, Nashville, Tennessee.*

INCIDENCE OF METHICILLIN-RESISTANT *STAPHYLOCOCCUS AUREUS* IN BELMONT UNIVERSITY DORMITORIES. *Alaia L. Williams* and Jennifer T. Thomas, Belmont University, Nashville, Tennessee.*

PRESENCE OF PBP2a PROTEIN IN METHICILLIN-RESISTANT *STAPHYLOCOCCUS AUREUS* ISOLATES CONTAINING THE *mecA* GENE. *Mollie A. Schlarman* and Jennifer T. Thomas, Belmont University, Nashville, Tennessee.*

INVESTIGATING MORTALITY RATES CAUSED BY MEC TYPE AND PVL TYPE IN *STAPHYLOCOCCUS AUREUS*. *Cyrus Eaton* and Nick Ragsdale, Belmont University, Nashville, Tennessee.*

CONFIRMATION OF PROGRAMMED CELL DEATH AND PMK-1 PATHWAYS IN *CAENORHABDITIS ELEGANS* TO *STREPTOCOCCUS PNEUMONIAE*. *Josh Cortopassi and Nick Ragsdale, Belmont University, Nashville, Tennessee.*

PHYSICS AND ASTRONOMY

VARIABLE STARS IN THE SDSS CALIBRATION FIELDS. *Melissa Butner*, J. Allyn Smith, and Douglas L. Tucker, Austin Peay State University, Clarksville, Tennessee (MB, JAS), and Fermilab National Laboratory, Batavia, Illinois (DLT).*

SCIENCE AND MATH TEACHING

INCORPORATION OF HANDS-ON ECOLOGICAL STUDIES INTO THE SUMMER SCIENCE AND MATH ACADEMY AT APSU. **Donald L. Sudbrink Jr., and Alan Bottomlee**, *Austin Peay State University, Clarksville, Tennessee (DS) and Kenwood High School, Clarksville, Tennessee (AB)*.

ZOOLOGY

INTERACTIONS BETWEEN WINTERING RED-HEADED AND RED-BELLIED WOODPECKERS IN A BOTTOMLAND HARDWOOD FOREST IN NORTHWEST TENNESSEE. **Caitlin M. Gussenhoven* and H. Dawn Wilkins**, *University of Tennessee at Martin, Martin, Tennessee*.

THE EFFECTS OF STREAM RESTORATION ON THE COMMUNITY STRUCTURE OF AQUATIC BENTHIC MACROINVERTEBRATES IN THE NORTH FORK OBION RIVER. **Tyler Hargrove*, Ryan Johnston*, Joshua Tompkins*, Cory Workman*, and Tom Blanchard**, *University of Tennessee at Martin, Martin, Tennessee*.

MACROINVERTEBRATE BIOASSESSMENT OF SURFACE MINED STREAMS IN SCOTT, CAMPBELL, AND ANDERSON COUNTIES IN EASTERN TENNESSEE. **Amanda L. Whitley* and Joseph Schiller**. *Austin Peay State University, Clarksville, Tennessee*.

PREVALENCE OF *TRYPANOSOMA CRUZI* IN CONENOSE BUGS (*TRITOMA SANGUISUGA*) FROM SELECTED SYLVATIC AREAS IN MIDDLE TENNESSEE. **Ludia Kim*, Dana Halchak, and Steve Murphree**, *Belmont University, Nashville, Tennessee*

PREVALENCE OF *TRYPANOSOMA CRUZI* IN CONENOSE BUGS (*TRITOMA SANGUISUGA*) FROM SELECTED PERIDOMESTIC AREAS IN MIDDLE TENNESSEE. **Dana Halchak*, Ludia Kim, and Steve Murphree**, *Belmont University, Nashville, Tennessee*

EGG DEPOSITION, LARVAL GROWTH RATES, AND METAMORPHOSIS IN THE MOLE SALAMANDER, *AMBYSTOMA TALPOIDEUM*, IN A WEST TENNESSEE WETLAND. **Patricia Ladd* and Tom Blanchard**, *University of Tennessee at Martin, Martin, Tennessee*.

THE EFFECT OF LARVAL SIZE ON THE ANTIPREDATOR BEHAVIORAL RESPONSE IN THE STREAMSIDE SALAMANDER, *AMBYSTOMA BARBOURI*. **Virginia Beazley* and John Niedzwiecki**, *Belmont University, Nashville, Tennessee*

THE ANTIPREDATOR RESPONSE OF THE STREAMSIDE SALAMANDER, *AMBYSTOMA BARBOURI* TO NOVEL PREDATORS. **Lauren Oeser* and John Niedzwiecki**, *Belmont University, Nashville, Tennessee*

THE USE OF NUCLEAR GENE MARKERS TO RESOLVE CONFLICTS IN THE PHYLOGENY OF THE SALAMANDER FAMILY, *AMBYSTOMATIDAE*. **Alaina Reagan* and John Niedzwiecki**, *Belmont University, Nashville, Tennessee*

MOVEMENTS OF PEOPLE AND WESTERN COTTONMOUTHS (*AGKISTRODON PISCIVORUS LEUCOSTOMA*) ALONG THE BICENTENNIAL TRAIL, ASHLAND CITY, TENNESSEE. **Nathalie D. Smith* and A. Floyd Scott**, *Austin Peay State University, Clarksville, Tennessee*

SURFACING BEHAVIOR IN CAPTIVE JUVENILE ALLIGATOR SNAPPING TURTLES (*MACROCHELYS TEMMINCKII*) UNDER THREE TEMPERATURE REGIMES. *Joshua T. Ream* and A. Floyd Scott, Austin Peay State University, Clarksville, Tennessee*

A DEMOGRAPHIC ANALYSIS OF THE RAINBOW TROUT POPULATION ON THE CANEY FORK RIVER. *Dave Henton* and A. Darlene Panvini, Belmont University, Nashville, Tennessee.*

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