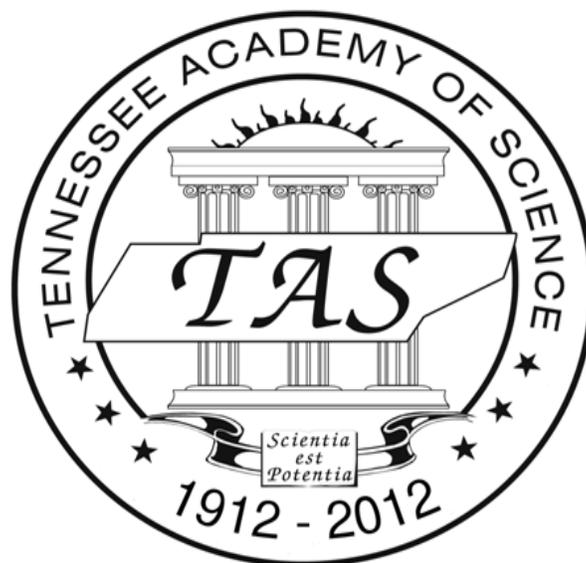




**127th Meeting
Tennessee
Academy of
Science
Program**



**November 17, 2017
The University of
Tennessee at Martin,
Martin, Tennessee**

Celebrating 105 Years

**Tennessee Academy of Science
Institutional Sustaining Members**

Austin Peay State University
East Tennessee State University
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Rhodes College
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2018 - xxxxx

First Class Mail

Dr. C. Steven Murphree
 Department of Biology
 Belmont University
 1900 Belmont Boulevard
 Nashville, Tennessee 37212-3758

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Welcome . . .

... to the 2017 Annual Meeting of the Tennessee Academy of Science! We hope you enjoy and benefit from this opportunity to present your research, to learn of other research going on in Tennessee, to interact in a relaxed atmosphere with other science professionals and to participate in the business of the Academy.

Please let members of the Executive Committee know if you have any needs or questions and if the meeting in any way does not meet (or if it exceeds) your expectations (e.g., the Saturday “experiment” for our Annual Meeting). We are always striving to improve our Academy and its impact upon scientists in Tennessee and beyond.

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Membership Committee Chair - Karen Kendall-Fite
kkendallfite@columbiastate.edu

TAS Standing Committees 2017

Auditing and Financial Oversight Committee

Dr. Tommy Wooten, Chair, Belmont University
Dr. Steven Murphree, ex-officio advisor, Belmont University

Education and Research Committee

Dr. Cindi Smith-Walters, Chair, Middle Tennessee State University
Angela Malone, Columbia State Community College
Dr. Anna Hiatt, East Tennessee State University
Dr. Jennifer R. Mandel, University of Memphis
Dr. Alicja K. Lanfear, Middle Tennessee State University
Dr. Kim Cleary Sadler, Middle Tennessee State University
Dr. Linda K. Jordan, Science Consultant

Fellows Committee

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Dr. Gladius Lewis, University of Memphis
Brother Kevin Ryan, Christian Brothers College

Long Range Strategic Planning Committee

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Dr. Kim Cleary Sadler, Middle Tennessee State University
Mandy Carter-Lowe, Columbia State Community College
Teresa Fulcher, Pellissippi State Community College
Dr. William H. Andrews, Jr., Oak Ridge National Laboratory (ret.)
Karen Kendall-Fite, Columbia State Community College
Dr. Steve Murphree, Belmont University

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Dr. Gary Hall, David Lipscomb University
Dr. Jeffrey Lebkeucher, Austin Peay State University

Necrology Committee

Dr. Martin V. Stewart, Chair, Middle Tennessee State University

Nominating Committee

Dr. Gilbert Pitts, Chair, Austin Peay State University
Dr. Kim Cleary Sadler, Middle Tennessee State University
Mandy Carter-Lowe, Columbia State Community College
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Dr. William H. Andrews, Jr. ORNL, Retired
Dr. Jeff Boles, Tennessee Technological University
Dr. Patricia Hull, Tennessee State University
Dr. Lewis Myles, Tennessee State University
Mr. Roger D. Applegate, Tennessee Wildlife Resources Agency

Resolutions Committee

Dr. William H. Andrews, Jr., Chair, Oak Ridge National Laboratory (ret.)
Ms. Betty Davis, East Tennessee State University
Dr. David Pitts, University of Tennessee--Martin

Announcements

If they are not already TAS members, presenters and attendees may register/become members by mail or at the Annual Meeting.

Registration/Membership forms will be available on-site, and they are available for download from the TAS website:

www.tennacadofsci.org

Dues can be paid in advance of the Annual Meeting or at on-site registration.

Student	\$10 annually
Emeritus	\$10 annually
Member	\$40 annually
Sustaining	\$50 annually
Supporting	\$100 annually
Life	\$400 single payment

In advance of the Annual Meeting, registration/membership forms can be mailed to the TAS Treasurer (please postmark by November 14):

Dr. Steve Murphree,
Department of Biology, Belmont University, 1900 Belmont Boulevard, Nashville, TN 37212-3757

A limited number of **luncheon tickets** will be available for purchase at the registration tables.

Meeting Schedule

Thursday, November 16, 2017

6:00 until 10:00pm	Executive Committee Meeting and Dinner Room 206, University Center
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Friday, November 17, 2017

7:30 a.m. until 1:00 p.m.	Registration Boling University Center Lobby
7:30 a.m. until 8:30 a.m.	Poster Setup University Center, 2nd Floor (Poster board and easel provided— look for the designated area to set up your poster)
7:30 a.m. until 8:00	Meeting of Section Chairs University Center Ballroom
8:30 a.m. until 9:45 a.m.	Poster Presentation and Judging University Center, 2nd Floor
10:00 a.m. until 10:30 a.m.	TAS Business Meeting University Center, Watkins Auditorium
10:30 a.m. until 10:35 a.m.	Welcome Dr. Wes Totten, Chair, Dept. of Agri- culture, Geosciences, and Natural Resources University Center, Watkins Auditorium
10:35 a.m. until 11:30a.m.	Plenary Session Moderated by Dr. J. Allyn Smith University Center, Watkins Auditorium
11:30 a.m. until 1:00 p.m.	Luncheon University Center Ballroom
1:00 p.m. until finished	Afternoon Technical Sessions/ Section Business Meetings University Center UC 111, UC 206, UC 225, UC 229, UC 230, UC 231, Library 118, Library 120

Notes

Notes

Meet our Panelists Speakers

10:30 -11:30 University Center, Watkins Auditorium

Dr. Mary Kidd,

Tennessee Technological University

Dr. Mary Kidd completed her B.S. in physics at Tennessee Tech University in 2004. She earned her PhD in experimental nuclear physics at Duke University in 2010. After completing two years as a postdoctoral research associate at Los Alamos National Laboratory, she joined the faculty back at Tennessee Tech in 2012.

Dr. Don Sudbrink,

Austin Peay State University

Dr. Donald Sudbrink is Chair of the APSU Agriculture department and runs the Farm and Environmental Education Center. He received his B.S in Entomology-Plant Pathology from the Univ. of Delaware and M.S in Entomology-Plant Pathology from University of TN. His Ph.D. from Auburn University is in Entomology.

Ms. Mitzi Adams,

NASA-Marshall Space Flight Center

Mitzi Adams is a solar scientist for NASA's Marshall Space Flight Center. Ms. Adams, earned a B.S. degree in physics with a mathematics minor from Georgia State University. In 1988 she earned a Master of Science degree in physics from the University of Alabama in Huntsville and began work at NASA/MSFC.

Ms. Angela Adams,

Austin Peay State University

Angela Adams is a veteran of the U.S. Navy and is pursuing a B.S. in Healthcare Management with a minor in Astronomy.

Presentation Title:

Highlights of the August 2017 Solar Eclipse

The panel will discuss activities during the total solar eclipse, highlighting public education and outreach, insect behavior experiments, citizen science activities, and the NASA effort to study the eclipse. We will also include a short discussion of plans for the 2019 and 2020 eclipses.

Oral Presentations

Agriculture-I

Chair: Joey E. Mehlhorn

Library 118

1:00 p.m.– 3:20 p.m.

Notes

1:00-1:05 Business Meeting

1:05-1:20 Bioenergy Crop Production: Investigating various plant characteristics of winter canola varieties in response to different rates of nitrogen fertilizer.

Priya Saini* and **Jason P. de koff**, *Tennessee State University, Nashville, Tennessee.*

1:20-1:35 Effect of fungicides and biorational products on *Rhizoctonia* root rot of viburnum. **Md Niamul Kabir***, **Terri Simmons**, **Fulya Baysal-Gurel**, *Tennessee State University, Nashville, Tennessee.*

1:35-1:50 Effects of post-weaning mat-feeding frequency on piglet health and performance. **Margaret A. Nagai*** and **Emalee K. Buttrey**, *The University of Tennessee at Martin, Martin, Tennessee.*

1:50-2:05 Instrumental texture profile analysis of cooked organic sweetpotatoes as affected by different processing methods. **Sochinwechi Nwosisi***, **Ramasamy Ravi**, and **Dilip Nandwani**, *Tennessee State University, Nashville, Tennessee.*

2:05-2:20 Horticulture as Therapy in Tennessee: Thirty-three Years and Growing. **Douglas Airhart**, *Tennessee Technological University, Cookeville, Tennessee.*

2:20-2:35 Gossypol profile's based selection of cotton lines for transcriptional analyses. **Aron Felts***, **Deependra Bhatta***, **Sarabjit Bhatti** and **Ahmad Aziz**, *Department of Agricultural Environmental Sciences, Tennessee State University, Nashville, TN.*

2:35-2:50 Promoting veterinary careers to high school students through hands-on experiences. **Clint Ary** and **Jason Roberts**, *University of Tennessee at Martin, Martin, Tennessee.*

* student author

presenting author, if not first author

12-4 Is the salience of a sensory modality fixed or determined by the environment in a crepuscular-nocturnal hawkmoth? **William L. Kuenzinger***, **Seré C. Jackson***, and **Joaquín Goyret**, *The University of Tennessee at Martin, Martin, Tennessee.*

12-5 Mechanosensory sensitivity in *Manduca sexta*. **Amanda Mayo***, **Jonathan Travis***, and **Joaquín Goyret**, *The University of Tennessee at Martin, Martin Tennessee.*

12-6 A survey of ticks (Acari: Ixodida) parasitizing reptiles from managed pine-hardwood forests of northwestern Alabama, USA. **Brent C. Newman***, **William B. Sutton**, **T.J. Haltigan***, and **Yong Wang**, *Tennessee State University, Nashville, Tennessee (BN, WS), and Alabama A&M University, Normal, Alabama (TH, YW).*

12-7 Is the winter abundance of Red-headed Woodpeckers related to acorn production in a bottomland hardwood forest in northwest Tennessee? **Bailey C. Kelso*** and **H. Dawn Wilkins**, *The University of Tennessee at Martin, Martin, Tennessee.*

* student author

presenting author, if not first author

2:50-3:05 Effects of winter wheat grazing on subsequent crop yield. **Jordan M. Curtis*** and **Emalee K. Buttrey**, *The University of Tennessee at Martin, Martin, Tennessee.*

3:05-3:20 Benefits of shelter animal use in veterinary health technology program. **Danny Walker***, **Sarah Anderson**, and **Amanda Waldon**, *University of Tennessee at Martin, Martin, Tennessee.*

Agriculture-II

Chair: **Joey E. Mehlhorn**

Library 120

1:00 p.m.– 3:20 p.m.

1:05-1:20 Utilizing virtual reality in a teaching methods course: Initial student perceptions. **OP McCubbins** and **Rachael Blackwell***, *Tennessee Technological University, Cookeville, Tennessee.*

1:20-1:35 Allelopathic effect of *Arundo donax* L. aqueous extract on *Lens culinaris* Medik. **Kenneth W. Pierce** and **Barbara A. Darroch**, *Tennessee Technological University, Cookeville, Tennessee and University of Tennessee at Martin, Martin, Tennessee.*

1:35-1:50 Developing probabilities for enhanced student success on the national licensing exam for veterinary technologist. **Sarah Anderson**, **Scott Parrott**, **Jason Roberts**, and **Joey Mehlhorn**, *University of Tennessee at Martin, Martin, TN.*

1:50-2:05 Best practices of middle Tennessee agriculture science programs. **Ashlyn Fussell*** and **Will Bird**, *Montgomery Central High School, Clarksville, Tennessee and University of Tennessee-Martin, Martin, Tennessee.*

2:05-2:20 Soybean Plant Development and Soil Conditions Affected by Planting Date and Maturity Group. **William Singer*** and **Barbara Darroch**, *University of Tennessee at Martin, Martin, Tennessee.*

2:20-2:35 Food safety: growing concerns of the 21st century in Saudi Arabia. **Faisl Almotairi***, **Enefiok Ekanem**, and **Mary Mafuyai**, *Tennessee State University, Nashville, Tennessee.*

* student author

presenting author, if not first author

2:35-2:50 Promoting veterinary careers to high school students through hands-on experiences. **Clint Ary and Jason Roberts**, *University of Tennessee at Martin, Martin, Tennessee*.

2:50-3:05 Improving skills in computer technology and data analysis. **Blessing C. Ajumobi***, **Harry Felder***, **Enefiok Ekanem**, and **Mary Mafuyai**. *Tennessee State University, Nashville, Tennessee*.

3:05-3:20 Investigation into Timing of Cuttings for Maximum Propagation Efficiency of *Vitis aestivalis* 'Norton/Cynthiana' Grapevines. **Nolan Jolley and Tony V. Johnston**, *Middle Tennessee State University, Murfreesboro, Tennessee*.

Botany & Cell and Molecular Biology

Chair: Carol Baskauf

UC 111

1:00 p.m. – 4:05 p.m.

1:00-1:05 Business Meeting

1:05-1:20 A Preliminary Vascular Plant Flora of the Bare Zone of the Copper Hill Basin, Polk County, Tennessee. **John Shelton***, **Joey Shaw** *University of Tennessee at Chattanooga, Chattanooga, Tennessee*.

1:20-1:35 Status update of *Smilax walteri* Pursh (Coral greenbrier) in southwest Tennessee. **Claude J. Bailey, Jr.**, *Jackson State Community College, Jackson, Tennessee*.

1:35-1:50 A floristic inventory of Orchard Knob Reservation. **Alaina Krakowiak***, **Andi Kur***, and **Joey Shaw**. *University of Tennessee at Chattanooga, Chattanooga, Tennessee*.

1:50-2:05 Assessing functional reproductive biology among floral morphs in *P. incarnata* in Putnam, Co., Tennessee. **Elizabeth B. Jackson***, **Toby Cooper** and **Shawn E. Krosnick**, *Middle Tennessee State University, Murfreesboro, Tennessee*, and *Tennessee Technological University, Cookeville, Tennessee*.

* student author

presenting author, if not first author

10-6 Fragment distribution in the Nimbus-6 rocket explosion in orbit. **Arjun Tan**, **Almuatasim Alomari**, and **Marius Schamschula**, *Alabama A & M University, Normal, Alabama*.

10-7 Genesis of the Gabbard diagram in the fragmentation of a satellite in a circular orbit. **Arjun Tan**, **Robert C. Reynolds**, and **Marius Schamschula**, *Alabama A & M University, Normal, Alabama (AT, MS)*, and *STAR Dynamics, Hilliard, Ohio (RCR)*.

Science and Math Teaching Posters

11-1 Sharing shared shelf science sea life in the classroom. **Stanton G. Belford**, *Martin Methodist College, Pulaski, Tennessee*.

11-2 The effects of self-regulated learning on the exam grades of college science classes. **Morgan A. Robertson*** and **Donald Shaw**, *The University of Tennessee at Martin, Martin, Tennessee*.

Zoology Posters

12-1 The effect of urban green roof size on the diversity and abundance of arthropods and mollusks. **Courtney L. Ankrapp*** and **Darlene Panvini**, *Belmont University, Nashville, Tennessee*.

12-2 An inter- and intra-year comparison of bat activity and bat species richness monitored via acoustic survey at Reelfoot Lake in northwest Tennessee. **P. Blayne Judkins*** and **Nancy Buschhaus**, *University of Tennessee at Martin, Martin, Tennessee*.

12-3 Bright-field and electron microscopy use in the identification of tardigrades, **Hope Johnson***, **LaRoy Brandt**, and **Stan Kunigelis**, *Lincoln Memorial University, Harrogate, Tennessee*.

* student author

presenting author, if not first author

9-08 Sensitivity of O157 and non-O157 serogroups of Shiga toxin-Producing *Escherichia coli* to elevated hydrostatic pressure. **Akilyah Sumlin***, **Kayla Sampson***, **Kristine Day***, **Abimbola Allison***, **Shahid Chowdhury**, **Aliyar Fouladkhah**, *Public Health Microbiology Laboratory, Tennessee State University, Nashville, Tennessee.*

Physics and Astronomy Posters

10-1 Further investigation on white dwarf BD+17° 4708 variability **Jesse McGaha***, **J. Allyn Smith**, and **Douglas Tucker**, *Austin Peay State University, Clarksville, TN (JM, JAS) and Fermi National Accelerator Lab, Batavia, Illinois (DT).*

10-2 Searching for variable stars in the field of Dolidze 35. **Jamin Welch*** **J. Allyn Smith** *Austin Peay State University, Clarksville, Tennessee (JW, JAS).*

10-3 Modeling and analysis of CTIO 1.5m white dwarf spectra. **Deborah J. Gulledge***, **Douglas L. Tucker**, **J. Allyn Smith**, **William Wester**, **Jacob M. Robertson***, **Jack H. Mueller***, **Mees B. Fix**, **Gautham Narayan**, **Pier-Emmanuel Tremblay**, *Austin Peay State University, Clarksville, Tennessee (DG, JS, JR), Fermi National Accelerator Laboratory, Batavia, Illinois (DT, WW), Michigan State University, East Lansing, Michigan (JM), Space Telescope Science Institute, Baltimore, Maryland (MF, GN), and University of Warwick, Coventry, UK (PET).*

10-4 Measurement of the K_α doublet of Molybdenum by x-ray diffraction. **William Alexander*** and **Timothy Brady***, *Department of Engineering, University of Tennessee at Martin, Martin, Tennessee.*

10-5 Fragment distribution in the NOAA-3 rocket explosion in orbit. **Arjun Tan**, **Almuatasim Alomari**, and **Marius Schamschula**, *Alabama A & M University, Normal, Alabama.*

* student author

presenting author, if not first author

2:05-2:20 On the significance of botanical illustration. **Andi Kur*** and **Joey Shaw**, *The University of Tennessee at Chattanooga, Chattanooga, Tennessee.*

2:20-2:35 Modernizing field collection methods. **Caleb Powell***, **Jacob Motley***, **Stewart Chunn***, **Joey Shaw** and **Hong Qin**. *University of Tennessee at Chattanooga, Chattanooga, Tennessee.*

2:35-2:50 The Effect of Sulfide-rich Water on Seedling Growth and Photosynthesis. **Danelle Solomon***, **DeEtra Young**, **T.D. Byl**, *Tennessee State University, Nashville, TN (DS, DY), U.S. Geological Survey, Nashville, TN (TDB)*

2:50-3:05 A Story Map of the Remaining Collections of Augustin Gattinger **John Shelton***, **Caleb Powell***, **Erica Rylander***, **Joey Shaw** *University of Tennessee at Chattanooga, Chattanooga, Tennessee.*

3:05-3:20 A distributional study of the narrowly endemic Nashville Bladderpod. **Edward W. Chester**, *Austin Peay State University, Clarksville, Tennessee.*

3:20-3:35 Rediscovery of *Rhynchosia latifolia* Nutt. ex Torr. & A. Gray (Prairie snoutbean) in Chester County, Tennessee. **Claude J. Bailey, Jr.**, *Jackson State Community College, Jackson, Tennessee.*

3:35-3:50 Digitizing one million herbarium specimens in Tennessee. **Joey Shaw**, **Caleb Powell***, **Dwayne Estes**, and **Ashley Morris**, *University of Tennessee at Chattanooga, Chattanooga, Tennessee, University of Tennessee at Chattanooga, Chattanooga, Tennessee, Austin Peay State University, Clarksville, Tennessee, Middle Tennessee State University, Murfreesboro, Tennessee.*

3:50-4:05 DNA-Protein binding specificities of PRMT1 (histone methylase enzyme) to their potential target genes in the model bioenergy crop species of *Panicum hallii*. **Shohana Huq***, and **Suping Zhou**, *Tennessee State University, Nashville, Tennessee.*

* student author

presenting author, if not first author

Chemistry

Chair: Stephen Everly

UC 225B

1:00 p.m. – 2:05 p.m.

1:00-1:05 Business Meeting

1:05-1:20 Microwave-assisted acetylation of terminal alkynes. **Benjamin Ide***, **Phillip Shelton**, *University of Tennessee at Martin, Martin, Tennessee.*

1:20-1:35 A Direct Estimation of Methane Emissions from Beef Cattle in a Feedlot Using Continuous Wave Cavity Ring-down Spectroscopic Technique. **¹Lahiru Gamage***, and **²Wilson K. Gichuhi**, ¹*School of Environmental studies, Tennessee Technological University, Cookeville, TN.*

1:35-1:50 Infrared Spectroscopic Studies of Propane and Ethane as the Main Methane Tracers in the Atmosphere **Samuel M. Hines*¹**, **William G. Qualls*¹** and **Wilson K. Gichuhi¹** *Tennessee Tech. University, Cookeville, Tennessee.*

1:50-2:05 Lipid Extraction of Wet Algal Biomass via Osmotic Shock. **Amber Ansari***, **Alison Parker**, **Rachel Rigsby**, *Belmont University, Nashville, Tennessee.*

Ecology and Environmental Science

Chair: Joe Schiller

UC 229

1:00 p.m. - 2:05 p.m.

1:00-1:05 Business Meeting

1:05-1:20 Two factors affecting retreat site selection in *Vaejovis carolinianus* populations from Tennessee's Upper Cumberland region. **Bob A. Baggett***, *Tennessee Technological University, Cookeville, Tennessee*

1:20-1:35 Distribution and Status of the Western Pygmy Rattlesnake (*Sistrurus miliarius streckeri*) in Tennessee. **Shawn D. Snyder***, **William B. Sutton**. *Tennessee State University, Nashville, Tennessee.*

* student author

presenting author, if not first author

Microbiology Posters

9-01 Kinetics of progression of pathogenicity of *Caenorhabditis elegans* in response to *Bacillus thuringiensis*. **Dana L. Cornwell*** and **Dr. Robert Grammer**, *Belmont University, Nashville, Tennessee .*

9-02 Synchronization of the life cycle of *Caenorhabditis elegans* and the correlation of worm age and worm death from the pathogen *Bacillus thuringiensis*. **Haley Hatfield***, **Robert Grammer**, *Belmont University Nashville, Tennessee. .*

9-03 Catalase activity among clinical isolates of *Enterococcus faecalis*. **Hunter J. Crouse*** and **Linda K. Husmann**, *The University of Tennessee at Martin, Martin, Tennessee..*

9-04 Cloning and sequencing of bacteriophage WL2 isolated from Reelfoot Lake. **Caroline E. Williams*** and **Michael J. Kempf**, *The University of Tennessee at Martin, Martin, Tennessee.*

9-05 Investigating the use of quorum sensing molecules in the pathogenic pathway of *Bacillus thuringiensis* in *Caenorhabditis elegans*. **Brooke A. Pugsley*** and **Robert Grammer**, *Belmont University, Nashville, Tennessee.*

9-06 Abiotic factors affecting the migration rate of cyanobacterial cells through sediment columns. **Cody Rasner***, **J.S. Metcalf**, **K. Rasner**, **R. Richer**, and **Darlene Panvini**, *Belmont University, Nashville, Tennessee (CR, DP), and Institute for Ethnomedicine, Jackson, Wyoming (JSM), and University of Wisconsin Marinette, Marinette, Wisconsin (KR, RR).*

9-07 Effect of ECIG-generated aerosol and conventional cigarette smoke on the survival of commensal oral bacteria. **Maxwell Smith***, **John Nelson**, **Giancarlo Cuadra** and **Dominic Palazzolo**, *Lincoln Memorial University, Harrogate, Tennessee (MS, JN, DP) and Muhlenberg College (GC).*

* student author

presenting author, if not first author

Health and Medical Science Posters

7-01 The role of DYRK1A inhibitor on tau phosphorylation. **Emily Rice***, **Hyonson Hwang**, and **H. Dawn Wilkins**, *University of Tennessee at Martin, Martin, Tennessee*

7-02 Amodiaquine, an anti-malarial compound, inhibits the growth of epithelial cancer cells in culture. **Bailey Bergmann***, **Chris Barton**, *Belmont University, Nashville, Tennessee.*

7-03 Lycorine hydrochlorine induces a proliferative arrest in colorectal cancer cells. **McKenzie Roberts*** and **Christopher Barton**, *Belmont University, Nashville, Tennessee.*

7-04 Biofilm formation and decontamination of wild-type and pressure-stressed *Cronobacter sakazakii* and *Salmonella* serovars. **Abimbola Allison***, **Shahid Chowdhury**, **Aliyar Fouladkhah**, *Tennessee State University, Nashville, Tennessee.*

7-05 Students, faculty, and staff feedback concerning campus dining for vegetarians. **Marcy Kaufman*** and **Terra L. Smith**. *The University of Memphis, Memphis, Tennessee.*

7-06 SEM study of bullfrog palates exposed to electronic cigarette (ECIG)-generated aerosol vs conventional cigarette smoke. **John M. Nelson***, **Stan.C. Kunigelis**, and **Dominic L. Palazzolo**. *Lincoln Memorial University, Harrogate Tennessee.*

History of Science

8-01 Role of Archibald Belcher in establishing the Tennessee Academy of Science. **Hunter D. Hudson*** and **Martin V. Stewart**, *Middle Tennessee State University, Murfreesboro, Tennessee.*

Math and Computer Science No poster presentations

* student author

presenting author, if not first author

1:35-1:50 The Use of Environmental DNA and Occupancy Modeling to Evaluate the Distribution of the Eastern Hellbender (*Cryptobranchus alleganiensis*) in Tennessee, U.S.A. **Jerónimo Da Silva Neto***, **William Sutton**, **Stephen Spear**, and **Michael Freake**, *Tennessee State University, Nashville, Tennessee (JDSN, WS), The Wilds, Cumberland, Ohio (SS), and Lee University, Cleveland, Tennessee (MF).*

1:50-2:05 Fish and coral species richness across different levels of protection along the Meso-American Barrier Reef. **Dedra E. Irwin***, **LaRoy S. E. Brandt**, *Lincoln Memorial University, Harrogate, Tennessee.*

Engineering & Engineering Technology

Chair: Khalid Tantawi

UC 206C

1:00 p.m. - 3:20 p.m.

1:00-1:05 Business Meeting

1:05-1:20 Production of biodiesel using a solar powered thermally-efficient high-yield ultrasonic processor. **Mary Seelam**, **Ivaylo Hardalov***, **Ian Doss**, **Joseph Hodge**, **Jahmal Cannon**, **Samuel Cafferty**, **James Rust**, and **Darien Jackson**, *Tennessee Tech University, Cookeville, Tennessee.*

1:20-1:35 Network resource management for cloud based networked control systems via adaptive sampling. **Mohammad A. Rahman***, **Liang Hong** and **L.H. Keel**, *Tennessee State University, Nashville, Tennessee.*

1:35-1:50 The coupling of light with piezoelectric properties in graphene oxide (GO) doped polyvinylidene fluoride (PVDF). **Omari Paul***, **Akinwunmi Joaquim***, **Yuri A. Barnakov**, **Akira Ueda**, **Richard Mu**, and **Frances Williams**, *Tennessee State University (OP, AJ, YB, RM, FW) and Fisk University (AU), Nashville, Tennessee.*

1:50-2:05

Integrating a human machine interface panel and a vision system in a low-cost supervisory control system. **Blake Johnson***, **Noah Dixon**, and **Khalid Hassan Tantawi**, *Motlow State Community College, Smyrna, Tennessee.*

* student author

presenting author, if not first author

2:05-2:20 Strain engineering to modify functional properties of piezoelectric polyvinylidene fluoride (PVDF) nanocomposites. **Akinwunmi Joaquim***, **Omari Paul***, **Yuri A. Barnakov**, **Ranganathan Parthasarathy**, **Lizhi Ouyang**, and **Frances Williams**, *Tennessee State University, Nashville, Tennessee.*

2:20-2:35 An investigation into the use of biomass gasification in electric power generation. **Corbin Catlett***, **Mark Cato**, **Chase Cline**, **Cody Dorris**, **Caleb Hale** and **Andrew Shoemaker**, *Tennessee Tech University, Cookeville, Tennessee.*

2:35-2:50 Enhancing the design of a solar powered mineral feeder, tracker and pesticide sprayer for livestock at Tennessee Tech farm. **Michael Dill**, **Adam Deatherage**, **Jeremy Johnson**, and **Daniel McGee**. *Tennessee Tech University, Cookeville, Tennessee.*

2:50-3:05 Programming by robots. **S. Tigrek** and **T. Tigrek**, *University of Tennessee at Martin, Martin, Tennessee.*

3:05-3:20 Design labs for electromechanical devices and instrumentation. **Russ Longhurst**, *Austin Peay State University, Clarksville, TN.*

Geology and Geography

Chair: **Michael Gibson & Mark Simpson**

UC 206B

1: 00 p.m. – 3:00 p.m.

1:00-1:15 Business Meeting

1:15-1:30 Unusual deposits of pyrite with glauconite in Waulsortian mudmound-like carbonates near Celina, TN. **Ashley R. Parkans***, **H. W. Leimer**, *Tennessee Tech University, Cookeville, Tennessee.*

1:30-1:45 Ozone and climate analysis of two same-latitude cities from June to October during 2005-2015: Hanford California and Nashville, Tennessee. **Jennifer S. Nailon***, **Robert Mark Simpson**, *The University of Tennessee at Martin, Martin, Tennessee.*

* student author

presenting author, if not first author

Geology and Geography Posters

6-01 Water movement habits in the Hatchie River Watershed. **Jonathan Wilson***, **Paula Gale**, **Mark Simpson**, *The University of Tennessee at Martin, Martin, Tennessee.*

6-02 Soil climate analysis network (SCAN) in Middle Tennessee. **April D. Jones***, **Dr. Mark Simpson**, and **Dr. Paula Gale**, *The University of Tennessee at Martin, Martin, Tennessee.*

6-03 Groundwater flow in a karst aquifer at Tennessee State University. **Renas Barzanji***, **Dafeng Hui**, (**acknowledgement-Tom Byl**) *Tennessee State University, Nashville, TN (RB, DH), U.S. Geological Survey, Nashville, TN (TB).*

6-04 Observations about *Tremichnus* sclerobiont borings from the Bond Formation (Pennsylvanian), Charleston Stone Quarry, Charleston, IL. **Michael A. Gibson**, **Amy McLemore***, and **Orana Paullus***, *The University of Tennessee at Martin, Martin, Tennessee (MAG, AM) and Weber State University, Ogden, Utah (OP) .*

6-05 An unusual teleost from the Coon Creek Formation (Late Cretaceous), Western Tennessee. **Michael A. Gibson** and **Randall Seagraves**, *The University of Tennessee at Martin, Martin.*

6-06 Geomicrobiology and geochemistry of Karst Aquifer at Tennessee State University. **Darius Lawson***, **DeEtra Young**, (**acknowledgement – Tom D. Byl**, *Tennessee State University, Nashville, TN (DL, DY), U.S. Geological Survey, Nashville, TN (TDB).*

6-07 Layer-parallel-shortening strain: a key to the Sevier-Laramide deformational sequence in the Tendoy Range, southwestern Montana. **Christopher D. Loyacano***, *University of Memphis, Memphis, Tennessee.*

* student author

presenting author, if not first author

5-10 Bat guild composition and habitat fragmentation in Costa Rica. **Justine Jusack* and LaRoy Brandt**, Lincoln Memorial University, Harrogate Tennessee.

5-11 The potential of farm ponds as breeding habitat for amphibians. **Darrell W. England* and LaRoy Brandt**, Lincoln Memorial University, Harrogate, TN .

5-12 Use of PIT tags in a mark-recapture study to assess survival and growth of the endangered freshwater mussel, *Epioblasma capsaeformis*, in the Powell River, Tennessee. **Victoria Long*** and **Agnes Vanderpool**, Lincoln Memorial University, Harrogate, Tennessee .

5-13 Effects of rearing density on the growth of larval madtom catfish, *Noturus flavipinnis*, raised in captivity. **Maggie Singleton***, **Agnes M. Vanderpool** and **LaRoy Brandt**. Lincoln Memorial University, Harrogate, Tennessee.

5-14 An Analysis of the Efficiency of a Newly-Designed Grade-Control Structure in a first-order stream in northwest Tennessee. **Maria B. Gonzalez***, **Arianna Howell***, **Bradley Hartman***, **Jeffrey Fore**, **Thomas Blanchard**, The University of Tennessee, Martin, TN, Murray State University, Murray, Kentucky, and The Nature Conservancy, Jackson, Tennessee.

5-15 Density and size of the beaded sea anemone (*Epicystis crucifer*) at a tropical reef in the southern Caribbean. **CalliAnna McDonald***, **Stanton G. Belford**, Martin Methodist College, Pulaski, Tennessee.

5-16 Detecting the presence and abundance of streamside salamanders (*Ambystoma barbouri*) in Middle Tennessee using environmental DNA. **Nicole Witzel***, **Dr. William Sutton**, and **Dr. Ali Taheri**, Tennessee State University, Nashville, Tennessee.

Engineering and Engineering Technology Posters No poster presentations

* student author

presenting author, if not first author

1:45-2:00 Preliminary observations of organism-substrate relationships of *Astraeospongia*, *Astylospongia*, *Hindia*, and *Palaeomanon* from the Brownsport Formation (Middle Silurian), Western Tennessee. **Nathaniel Newlin* and Michael A. Gibson**, The University of Tennessee at Martin, Martin, Tennessee.

2:00-2:15 Preliminary results regarding the influence of urban expansion on surface water runoff in the Jackson, Tennessee area. **Thomas (Lan) DePriest**, The University of Tennessee at Martin, Martin, Tennessee.

2:15-2:30 A review of conditions that influence harmful algal blooms. **Tom Byl**, U.S. Geological Survey, Nashville, Tennessee

2:30-2:45 Groundwater/Surface-water interaction along the western edge of the Blue Ridge province, Blount and Sevier Counties, Tennessee. **Michael Bradley**, **John Carmichael**, **Greg Johnson**, and **Ben Miller**, U.S. Geological Survey, Nashville, Tennessee.

2:45-3:00 Climate change science education and research potential in rural areas of western Kentucky and Tennessee. **Robert M. Simpson**, **Rachna Tewari**, **Joey Mehlhorn**, **Brian Parr** and **Naveen Musunuru**, The University of Tennessee at Martin, Martin, TN (RS, RT, JM) and Murray State University, Murray, Kentucky (BP, NM).

Health and Medical Sciences

Chair: D. Nicholas Ragsdale

UC 225A

1:00 p.m. - 1:20 p.m.

1:00-1:05 Business Meeting

1:05-1:20 Elucidating the role of dysregulated manganese homeostasis in DNA damage response signaling in Huntington's Disease, **Ilyana R Ilieva**, **Piyush Joshi**, and **Dr. Aaron Bowman**, Vanderbilt University Medical Center, Nashville, Tennessee.

* student author

presenting author, if not first author

1:20-1:35 Fate and biofilm formation of wild-type and rifampicin-resistant *Cronobacter sakazakii* in biotic and abiotic environments. **Kayla Sampson***, **Akiliyah Sumlin***, **Kristine Day***, **Abimbola Allison***, **Shahid Chowdhury**, **Aliyar Fouladkhah**, *Public Health Microbiology Laboratory, Tennessee State University, Nashville, Tennessee.*

History of Science

Chair: Brother Kevin Ryan

Co-Chair: Martin V. Stewart

UC 225C

1:00 p.m. – 1:35 p.m.

1:00-1:05 Business Meeting

1:05-1:20 The Archimedes Palimpsest. **John J. Schommer**, *University of Tennessee at Martin, Martin, Tennessee.*

1:20-1:35 Contributions of MTSU in establishing the Tennessee Academy of Science. **Martin V. Stewart and Hunter D. Hudson**, *Middle Tennessee State University, Murfreesboro, TN.*

Mathematics and Computer Science

Chair: Nicholas Kirby

UC 230A

1:00 p.m. - 2:35 p.m.

1:00-1:05 Business Meeting

1:05-1:20 Neighborhood-prime labelings of tree graphs. **Malori E. Cloys* and N. Bradley Fox**, *Austin Peay State University, Clarksville, TN.*

1:20-1:35 Doubly-inflated negative binomial model using Gaussian copula. **Joseph Mathews***, **Sumen Sen**, *Austin Peay State University, Clarksville, Tennessee.*

1:35-1:50 Population projections for Clarksville – Montgomery County Tennessee. **Menique Brewer***, **Vajira A Manathunga**, *Austin Peay State University, Clarksville, Tennessee.*

* student author

presenting author, if not first author

5-02 Examining the presence of *Escherichia coli* and fecal coliforms at Percy Priest Lake in Nashville, Tennessee. **Hannah Forгани ***, **Chris Barton**, and **Matt Heard**, *Belmont University, Nashville, Tennessee.*

5-03 Variations in arthropod diversity across green roofs differing in age and types of plant coverage. **Taryn G. Anderson* and Darlene Panvini**, *Belmont University, Nashville, Tennessee.*

5-04 Benthic communities at a tropical reef in the southern Caribbean after tropical storm Brett. **Madeline Woods***, **CalliAnna McDonald***, **Douglas Dorer**, **Stanton G. Belford**, *Martin Methodist College, Pulaski, Tennessee.*

5-05 Fertilization of green sea urchin, *Lytechinus variegatus*, negatively impacted by increasing temperature and acidity. **Cady L. Sliger***, **Virginia Flear**, **James Wetzel**, and **Darlene Panvini**, *Belmont University, Nashville, Tennessee (CS, DP), and Gulf Coast Research Laboratory, Ocean Springs, Mississippi (VF, JW).*

5-06 Decomposition of leaf litter on urban green roofs of different ages compared to decomposition in a community garden. **Latara Jarvis *** and **Darlene Panvini**, *Belmont University, Nashville, Tennessee.*

5-07 The effects of exotic plant species on insect biodiversity within an urban temperate deciduous forest. **Christien Jackson* and Darlene Panvini**, *Belmont University, Nashville, Tennessee.*

5-08 The diversity of microbial communities on urban campus green roofs. **Terra Lexus Roberts* and Darlene Panvini**, *Belmont University, Nashville Tennessee.*

5-09 The effects of exotic invasive plant species on pollinator diversity in an urban temperate deciduous forest. **Kylie C. Lawrence* and Darlene Panvini**, *Belmont University, Nashville, Tennessee.*

* student author

presenting author, if not first author

4-06 The rotational-vibration spectra of HCN from cigarette smoke using FTIR spectroscopy. **Samuel M. Hines***, **William G. Qualls***¹ and **Wilson K. Gichuhi**¹ *Department of Chemistry, Tennessee Tech University, Cookeville, Tennessee.*

4-07 The use of polarimetry and spectroscopic methods for the identification of an unknown terpenoid. **Victoria Lansdale*** and **Genessa M. Smith**, *The University of Tennessee at Martin, Martin, Tennessee.*

4-08 A comparison of antioxidant content in supplements and common fruits. **Kaitlen Kisiloski*** and **Sarah S. Pierce**, *Cumberland University, Lebanon, Tennessee.*

4-09 Blood alcohol and arson investigation using SPME fibers. **Chelsea Parker*** and **Robbie Montgomery**, *The University of Tennessee, Martin, Tennessee.*

4-10 Analysis of chemical and physical properties of regional honeys. **Bailee Barrett*** and **Abigail H. Shelton**, *The University of Tennessee at Martin, Martin, Tennessee.*

4-11 Multistep organic synthesis in introductory undergraduate organic chemistry laboratory. **Lane Brown*** and **Jozsef Devenyi**, *The University of Tennessee at Martin, Martin, Tennessee.*

4-12 Three component separation of an unknown sample. **James Crews***, **Shannon Belton***, **Phillip Shelton**, *The University of Tennessee at Martin, Martin, Tennessee.*

Ecology and Environmental Science

5-01 Assessing biodiversity and leech (Hirudinea) parasitism of semi-aquatic turtles in an urbanized wetland in Nashville, Tennessee. **Laura Horton***, **Nicole Witzel***, **Brittany Hogan***, **Shawn Snyder***, **Jeronimo Silva***, **Brent C. Newman***, and **William Sutton**, *Tennessee State University, Nashville, Tennessee.*

* student author

presenting author, if not first author

1:50-2:05 Modeling yield rates on US bonds. **Tinchie F Stevye***, **Vajira A Manathunga**, *Austin Peay State University, Clarksville, Tennessee.*

2:05-2:20 Diagnosing cirrhosis: A fractional calculus perspective. **Kindyl L. King***, **Samuel N. Jator**, *Austin Peay State University, Clarksville, Tennessee.*

2:20-2:35 Code Folio. **Bob Bradley**, *UT Martin, Martin, Tennessee.*

Microbiology
Chair: Chris Barton
UC 231
1:00 p.m. - 2:20 p.m.

1:00-1:05 Business Meeting

1:05-1:20 Decontamination of raw milk from *Listeria monocytogenes* using high pressure pasteurization. **Abimbola Allison***, **Shahid Chowdhury**, **Aliyar Fouladkhah**, *Public Health Microbiology Laboratory, Tennessee State University, Nashville, Tennessee.*

1:20-1:35 Heme-like gallium protoporphyrin IX inhibits catalase activity in *Acinetobacter baumannii*. **Brock Arivett***, *Middle Tennessee State University, Murfreesboro, Tennessee.*

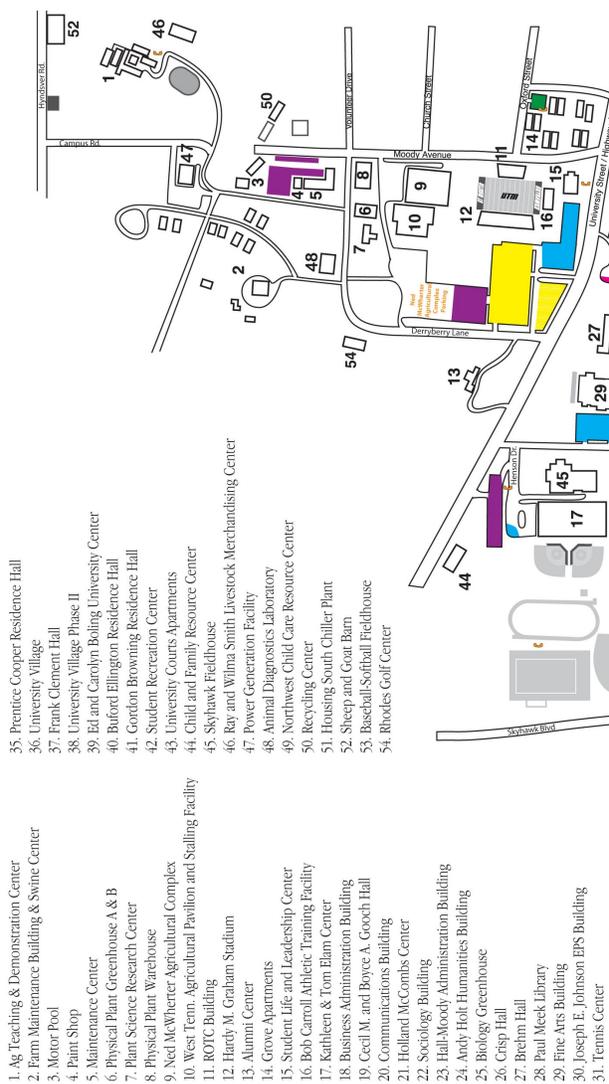
1:50-2:05 Re-evaluation of CspZ, a complement regulator-acquiring surface protein of *Borrelia burgdorferi*, as a possible vaccine target for Lyme disease in a canine host. **Nerina Jusufovic*** and **Chad S. Brooks**, *Austin Peay State University, Clarksville, Tennessee.*

2:05-2:20 Mining microbial genomes of biotechnological significance through metagenomic screening in goat rumen. **Santosh Thapa***, **Hui Li**, **Sarabjit Bhatti**, and **Suping Zhou**. *Tennessee State University, Nashville, Tennessee.*

* student author

presenting author, if not first author

Campus Parking Map



- 1. Ag Teaching & Demonstration Center
- 2. Farm Maintenance Building & Swine Center
- 3. Motor Pool
- 4. Paint Shop
- 5. Maintenance Center
- 6. Physical Plant Greenhouse A & B
- 7. Plant Science Research Center
- 8. Physical Plant Warehouse
- 9. Ned McWhorter Agricultural Complex
- 10. West Tenn. Agricultural Pavilion and Stalling Facility
- 11. ROTC Building
- 12. Hardy M. Graham Stadium
- 13. Alumni Center
- 14. Grove Apartments
- 15. Student Life and Leadership Center
- 16. Bob Carroll Athletic Training Facility
- 17. Kathleen & Tom Elam Center
- 18. Business Administration Building
- 19. Cecil M. and Boyce A. Gooch Hall
- 20. Communications Building
- 21. Holland McCombs Center
- 22. Sociology Building
- 23. Hall-Moody Administration Building
- 24. Andy Hot Humanities Building
- 25. Biology Greenhouse
- 26. Crisp Hall
- 27. Brehm Hall
- 28. Paul Meek Library
- 29. Fine Arts Building
- 30. Joseph E. Johnson EPS Building
- 31. Tennis Center
- 32. Student Recreation Center
- 33. University Courts Apartments
- 34. Child and Family Resource Center
- 35. Skyhawk Fieldhouse
- 36. University Village
- 37. Frank Clement Hall
- 38. University Village Phase II
- 39. Ed and Carolyn Boling University Center
- 40. Buford Ellington Residence Hall
- 41. Gordon Browning Residence Hall
- 42. Student Recreation Center
- 43. University Courts Apartments
- 44. Child and Family Resource Center
- 45. Skyhawk Fieldhouse
- 46. Ray and Wilma Smith Livestock Merchandising Center
- 47. Power Generation Facility
- 48. Animal Diagnostics Laboratory
- 49. Northwest Child Care Resource Center
- 50. Recycling Center
- 51. Housing South Chiller Plant
- 52. Sheep and Goat Barn
- 53. Baseball/Softball Fieldhouse
- 54. Rhodes Golf Center

3-08 In Search of a Simple Microfluidic Method for the Chemotaxis Assay. **Sherif S. Helme^{*}, Robert Grammer, and Krista McBride**, Belmont University, Nashville, Tennessee.

3-09 Stable inheritance of olfactory imprinting in *Caenorhabditis elegans*. **Hope Kramer^{*} and Robert Grammer**, Belmont University, Nashville, Tennessee.

3-10 Single cell proteomics of long term aluminum treated switchgrass plants. **Mahesh Rangu^{*}, Yingde Zhu^{*}, Sarabjit Bhatti, Suping Zhou, Theodore W. Thannhauser**. Tennessee State University, Nashville, TN, and Cornell University, Ithaca, New York.

Chemistry Posters

4-01 The effects of weak reducing agents in the seed-mediated synthesis of gold nanorods. **Benjamin Ide^{*}, Joshua Hinman, Catherine J. Murphy**, University of Illinois at Urbana-Champaign, Urbana, Illinois.

4-02 Susceptibility of aromatic amino acids and peptides to chlorine dioxide and ozone. **Heather Deal^{*} and Beng Ooi**, Department of Chemistry, Middle Tennessee State University, Murfreesboro, Tennessee.

4-03 Recovery of silver nitrate from silver chloride waste. **James F. von Dollen^{*}, Sofia Oliva^{*}, Sarah E. Max^{*}, and Jen Esbenshade**, The University of Tennessee at Martin, Martin, Tennessee.

4-04 Silicon microspheres. **Savannah Metheny^{*}, Bailee Barrett^{*}, Benjamin Ide^{*}, John Overcash, and Jen Esbenshade**, The University of Tennessee at Martin, Martin, Tennessee.

4-05 Effects of chlorine dioxide on microorganisms. **Roderick Moore^{*} and Beng Guat Ooi**, Department of Chemistry, Middle Tennessee State University, Murfreesboro, Tennessee. .

* student author

presenting author, if not first author

Cell and Molecular Biology Posters

3-01 Novel etoposide drugs inhibit the growth of cancer cells in culture. **Priyanka Kumar***, **Joseph Dewese**, **Chris Barton**, Belmont University, Nashville, Tennessee (PK and CB) and Lipscomb University College of Pharmacy, Nashville, Tennessee (JD).

3-02 The role of α_1 -adrenergic receptor antagonists in the treatment of colorectal cancer. **Colin Cardwell*** and **Chris Barton**, Belmont University College of Science & Mathematics, Nashville, TN. Effect of inorganic vs. organic selenium compounds as a pre-treatment to oxidative stress caused by 6-Hydroxydopamine treatment in *C. elegans*. **AC Dowd*** and **Nick Ragsdale**, Belmont University, Nashville, TN.

3-03 The Effects of bromocriptine on the mobility of *Caenorhabditis elegans* worms induced with Parkinson's-like disease. **Midya Yarwis*** and **Nick Ragsdale**, Belmont University, Nashville, Tennessee.

3-04 Investigating the potential role of nsy-1 in response to an oxidative stressor. **Taylor Hodge*** and **Nick Ragsdale**, Belmont University, Nashville, Tennessee.

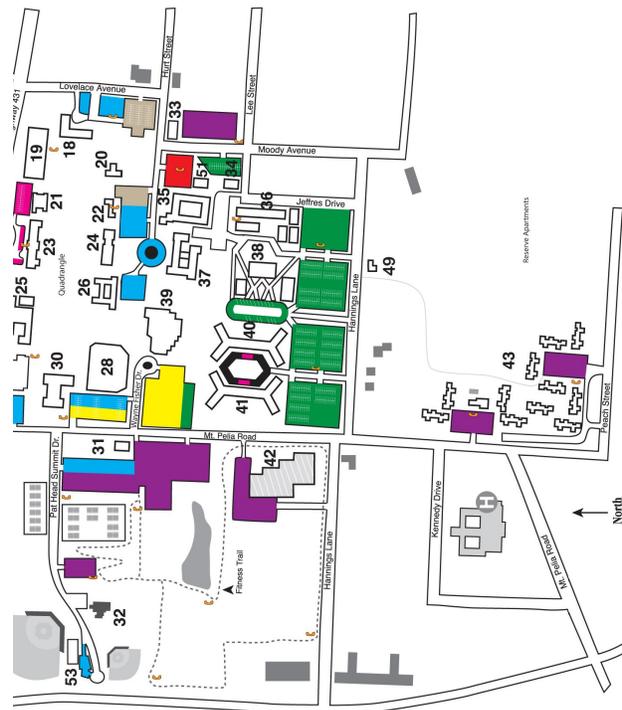
3-05 Investigating the effect of the NMDA-type neurotransmitter glutamate on habituation in *Caenorhabditis elegans*. **Yasmine Telwar*** and **Nick Ragsdale**, Belmont University, Nashville, Tennessee.

3-06 Insight on aversive learning in *Caenorhabditis elegans* when introduced to *Bacillus thuringiensis* during reproduction and growth. **Brandi Duke*** and **Dr. Robert Grammer** Belmont University Nashville, Tennessee.

3-07 Isolation of Lysosomes in *Caenorhabditis elegans*. **Ryan T. Fox***, **Robert T. Grammer**, Belmont University, Nashville, Tennessee.

* student author

presenting author, if not first author



*Cooper/Clement residents require an additional permit issued for each semester. It is the student's responsibility to come to the Department of Public Safety in Crisp Hall at the beginning of fall and spring semesters to obtain the additional permit, free of charge.

Emergency Call Box locations

- Non Commuters
- Staff
- Commuters
- Restricted (*Cooper/Clement only)
- Time Limit Parking
- Unrestricted
- Commuter, Restricted (*Cooper/Clement only)

Where you should park...

- Staff
- Commuters
- Non-Commuters
- Clement-Cooper

Boling University Center is designated #39 on the map. Park in the Yellow lot to the west of the University Center or the Purple lot across Mt. Pelia Road.

Address for the University Center is:
 61 Mount Pelia Road,
 Martin, TN 38238
 (36°20'26", -88°51'55")

Physics and Astronomy

Chair: **J. Allyn Smith**

UC 230B

1:00 p.m. – 2:35 p.m.

1:00-1:05 Business Meeting

1:05-1:20 Neutron inelastic scattering on ^{134}Xe at $E_n = 5 - 8$ MeV. **Mary Kidd, Werner Tornow, Sean Finch, FNU Krishichayan, Megha Bhike**, *Tennessee Tech University, Cookeville, Tennessee (MK), TUNL/Duke University, Durham, North Carolina (WT, SF, FNUK, MB)*.

1:20-1:35 Development of an open source, LED based, tunable light source. **William Kuenzinger* and Jason Alexander**, *University of Tennessee-Martin, Martin, Tennessee*.

1:35-1:50 APSU's participation in the citizen CATE experiment. **Benton D Fagan*, Spencer L Buckner, J Allyn Smith**, *Austin Peay State University, Clarksville, Tennessee*.

1:50-2:05 Analysis of the generation of an anemone-type magnetic field by magnetic flux emergence in an on-disk coronal hole. **Mitzi L. Adams, Navdeep K. Panesar, Ronald L. Moore, Allyn F. Tennant, Robert Woolley**, *NASA/MSFC, Huntsville, Alabama (MA, AF), NASA/USRA, Huntsville, Alabama (NP), University of Alabama in Huntsville, Huntsville, Alabama (RM), Basis Chandler, Chandler, Arizona (RW)*.

2:05-2:20 How to find an exoplanet in a haystack of speckles. **Elizabeth J. Young**, *Rhodes College, Memphis, Tennessee*.

2:20-2:35 Searching for variables in the SDSS calibration fields. **J. Allyn Smith, Melissa J. Butner, Douglas L. Tucker, Sahar S. Allam**, *Austin Peay State University, Clarksville, Tennessee (JAS), Stanford Linear Acceleratory Center, Stanford, California (MJB), and Fermi National Accelerator Lab, Batavia, Illinois (DLT, SSA)*.

* student author

presenting author, if not first author

1-10 Molecular and functional novelty of animal unconventional interferon- ω . **Lauren E. Shields*, Yongming Sang**, *Tennessee State University, Nashville, Tennessee*.

1-11 What impacts student success on the veterinary technician national examination? **Jason Roberts, Scott Parrott, and Joey Mehlhorn**, *The University of Tennessee at Martin, Martin, TN*.

1-12 Fungicidal management of ambrosia beetles in ornamental nurseries. **Matthew Brown*, Jason Oliver, Karla Adesso, Fulya Baysal-Gurel, and Paul O'Neal**. *Tennessee State University, Nashville, TN*.

1-13 Effects of nitrogen fertilizer rates and cultivar on yield and seed characteristics of winter canola in Nashville, Tennessee. **Kyle D. McGeary* and Jason P. de Koff**, *Tennessee State University, Nashville, Tennessee*.

Botany Posters

2-01 New occurrence data for state and globally listed plant species in Tennessee present in TTU's Hollister Herbarium (HTTU). **William Buck, Darrian Turner, Shawn Krosnick**, *Tennessee Technological University, Cookeville, Tennessee*.

2-02 A quantitative analysis of a kale hybrid, *Tronchuda beira*, grown on a green roof, in a garden and in EarthBox[®] containers. **Caroline Glover* and Darlene Panvini**, *Belmont University, Nashville, Tennessee*.

2-03 Growth of a common pioneer species (*Salix nigra*) in a hypereutrophic environment. **Darya Klyuyenko* and James McAllister**, *Bethel University, McKenzie, Tennessee*.

2-04 The hidden language of plants: Making sense of VOCs and plant defense. **Joshua C. Kraft* and Carol J. Baskauf**, *Austin Peay State University, Clarksville, Tennessee*.

* student author

presenting author, if not first author

1-02 Understanding Food Environment: Implication for Nutritional Security of Households around Food Desert Areas of Metro Nashville. **Omobolaji Omobitan***, **Michael Crawford***, and **Aditya R. Khanal**, *Tennessee State University, Nashville, Tennessee.*

1-03 Entrepreneurship and innovation in agriculture. **Alyssa R. Counce***, **Rachna Tewari**, and **Joey Mehlhorn**, *The University of Tennessee at Martin, Martin, Tennessee.*

1-04 Enhancement of switchgrass in degraded soil using amendment and inoculation strategies. **Ekundayo O. Adeleke*** and **E. Kudjo Dzantor**, *Tennessee State University, Nashville, Tennessee.*

1-05 Food safety regulatory outreach and technical assistance for emerging entrepreneurs. **Aliyar Fouladkhah**, *Public Health Microbiology Laboratory, Tennessee State University, Nashville, Tennessee.*

1-06 Control of *Listeria monocytogenes* in ice-cream base using elevated pressure and natural antimicrobials. **Kristine Day***, **Akiliyah Sumlin***, **Kayla Sampson***, **Abimbola Allison***, **Aliyar Fouladkhah**, *Public Health Microbiology Laboratory, Tennessee State University, Nashville, Tennessee.*

1-07 Horticultural Therapy: A tool for improving sociability among adults with mental illness. **Ellen Wolfe**, **George Chitiyo**, **Ashley Akenson***, **Sherrye Winnett**, **Douglas Airhart**, *Tennessee Technological University, Cookeville, Tennessee.*

1-08 Impact of thermal treatments on the texture characteristics of cooked sweetpotatoes. **Sochinwechi Nwosisi***, **Ramasamy Ravi**, and **Dilip Nandwani**, *Tennessee State University, Nashville, Tennessee.*

1-09 Changing strategies for dealing with large online class sizes. **Jessica Crews-Garcia**, **Rachna Tewari**, and **Joey Mehlhorn**, *University of Tennessee at Martin, Martin, TN.*

* student author

presenting author, if not first author

Science and Math Teaching

Chair: **Weston Dulaney**

UC 230C

1:00 p.m. – 2:50 p.m.

1:00-1:05 Business Meeting

1:05-1:20 The STEM Center for Teaching and Learning. **John W. Overcash** and **Steve Elliott** *The University of Tennessee at Martin, Martin, TN.*

1:50-2:05 STEM Academy: A summer program for NSF S-STEM Scholars. **Robbie Montgomery**, **Phillip Shelton**, **Michael Gibson**, **Jason Devito**, **Ray Witmer**, and **Bob Bradley**, *The University of Tennessee, Martin, Tennessee.*

2:05-2:20 Take a shot: Using simple calculations to explore how immunization programs protect populations from disease. **Darrell L. Ray**, *The University of Tennessee-Martin, Martin, TN.*

2:20-2:35 Investigating the impacts of coal mining in a mountain-top removal watershed: an environmental case study for the college classroom. **LaRoy Brandt** and **Agnes Vanderpool**, *Lincoln Memorial University, Harrogate, TN.*

2:35-2:50 Using art to teach general and organic chemistry laboratories. **Sarah S. Pierce**, *Cumberland University, Lebanon, Tennessee.*

Zoology

Chair: **Tom Blanchard**

UC 206A

1:00 p.m. – 2:50 p.m.

1:00-1:05 Business Meeting

1:05-1:20 Differential occurrence of ticks on small mammals based on age and sex. **Rebecca A. Butler***, **Rebecca Trout-Fryxell**, **Allan E. Houston**, **David Paulsen**, and **Michael L. Kennedy**. *The University of Memphis (RAB, MLK), The University of Tennessee, Knoxville, Tennessee (RTF, DP), Ames Plantation, Grand Junction, Tennessee (AEH).*

* student author

presenting author, if not first author

1:20-1:35 Comparisons of physiological limitations and genomic synteny in populations of *Mnemioopsis leidy* (Ctenophora). **Logan N. Campbell**, **Alexandra M. Hernandez**, and **Joseph F. Ryan**, Whitney Laboratory for Marine Bioscience, St. Augustine, Florida (LC, AH, JR) University of Florida, Gainesville, Florida (LC, AH, JR), and The University of Tennessee at Martin, Martin, TN (LC).

1:35-1:50 Seasonal-activity patterns of the eastern woodrat (*Neotoma florindania illinoensis*). **Jessica Davin*** and **Michael L. Kennedy**. The University of Memphis, Memphis, Tennessee.

1:50-2:05 Using scent-station procedures to monitor medium and large mammals. **James W. Gaines*** and **Michael L. Kennedy**. Edward J. Meeman Biological Station and The University of Memphis, Memphis, Tennessee.

2:05-2:20 An assessment of species richness of mammals at two urban sites in western Tennessee. **Felice A. Murden*** and **Michael L. Kennedy**, Edward J. Meeman Biological Station and University of Memphis, Memphis, Tennessee.

2:20-2:35 Agricultural pest management yields new insight into movement of western pocket gophers (*Thomomys* sp.) **Brittany M. Pope***, **Juliann L. Waits**, **Roger A. Baldwin**, and **Michael L. Kennedy**, The University of Memphis, Memphis, Tennessee (BP, ML), Southwest Community College, Memphis, Tennessee (JW), and University of California, Davis, Davis, California (RB).

2:35-2:50 An assessment of biodiversity of small mammals in anthropogenic edge habitat: is there an edge effect? **Sarah E. Swing***, **Michael L. Kennedy**, The Univ. of Memphis, Memphis, TN.

2:50-3:05 Differences in habitat use among species of aquatic snakes in the Reelfoot Lake area of northwestern Tennessee. **Erik F. Velazquez*** and **Tom A. Blanchard**, University of Tennessee at Martin, Martin, Tennessee.

* student author

presenting author, if not first author

3:05-3:20 Hibernation and hibernacula attributes associated with the timber rattlesnake (*Crotalus horridus*) at Centere Hill Lake in Dekalb County, Tennessee. **Danny L. Bryan**, Cumberland University, Lebanon, Tennessee.

3:25-3:40 Life at the “Peay’Clipse” and Beyond: Observations on the behavior of several organisms in Tennessee and adjacent states during the Great American Eclipse of 21 August 2017. **Donald Sudbrink**, **Rodney Mills**, **Robert L. Moore**, **Emily Rendleman**, **John Fussell**, **Amy Wright**, **Mitzi Adams**, **Thomas Payne** and **Lynn Faust**. Austin Peay State University, Clarksville, Tennessee (DS, RM, RLM, ER, JF, AW), NASA/Marshall Space Flight Center, Huntsville, Alabama (MA), Woodlawn, TN (TP), Knoxville, TN (LF).

Poster Presentations

University Center, Second Floor

Set Up: 7:30—8:30 (Poster board & easel are provided; posters are displayed by

technical section name and number)

Display: 8:30 – 9:45

Judging: 8:30 – 9:45

(Presenters should be near their displays during the judging to answer questions.)

Agriculture Posters

1-01 Building capacity for climate change education (CCE) and expanding research and learning opportunities in rural communities of Tennessee and Kentucky. **Rachna Tewari**, **Mark Simpson**, **Joey Mehlhorn**, **Naveen Musunuru** and **Brian Parr**, The University of Tennessee Martin, Martin, Tennessee (RT, MS, JM), and Murray State University, Murray, Kentucky (NM, BP).

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