WEST VIRGINIA ACADEMY OF SCIENCE
94th Annual Meeting
March 30, 2019
West Liberty University, West Liberty, WV
West Virginia Academy of Science

94th Annual Meeting

March 30, 2019

EVENT SPONSORS:
Address:
The Academy meeting will be held at the West Liberty University Highlands Center, located on the second floor of 355 Wharton Circle, Suite 200, Triadelphia, WV 26059.

Directions to the Highlands Center:
Take Interstate 70, Exit 10. If arriving from the east, turn right at the end of the exit. If coming from the west, curve to the right at the end of the exit ramp and cross the bridge. Proceed on Cabela Drive to the last stop light, and turn right into our parking lot. The entrance is the first door on the West side of the building. In the lobby, take the stairs immediately on your right (elevator on the left) directly to the WLU entrance.
INTERIOR MAP

208
LOBBY

209 210 225
CONFERENCE ROOM

212 213
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Welcome to the WVAS Annual Meeting!

On behalf of West Liberty University, The College of Sciences, and the Department of Natural Sciences and Mathematics, we welcome you to the 2019 West Virginia Academy of Sciences Annual Meeting. We are excited to provide the venue for this meeting and hope you have an engaging and rewarding experience as you immerse yourself in scientific discoveries and discussions.

We are grateful to the host committee for planning this event, as well as the West Liberty University Highlands Center, West Liberty University Information Technology Service Department and the sponsors: Azer Scientific®, Fisher Scientific®, Perkin Elmer®, and Thermo Scientific®. We are also grateful to the students of West Liberty University’s Biology Club, Chemistry Club, Chi Beta Phi chapter, and our graduate students for volunteering.

We truly hope you have a wonderful and productive meeting.

- Dr. Karen Kettler
Interim Dean, College of Sciences, West Liberty University

2019 WVAS Local Organizing Committee:

Committee Chair: Dr. Zac Loughman (Biology Program)

Departmental Representatives:

The Biology program: Dr. Diana Barber
Mr. Jeremy Dann
Dr. Joseph Horzempa
Dr. Karen Kettler
Dr. Robert Kreisberg
Mr. Joe Nolan
Dr. Deanna Schmitt
Dr. Roger Seeber
Dr. James Wood
Dr. Mathew Zdilla

The Chemistry program: Dr. John Serra
Dr. Douglas Swartz

Graduate Student representatives: Ms. Tanya Khan
Ms. Nicole Sadecky
Mr. Chris Vopal
Schedule Overview

**Saturday March 30**

8:00 am – 11:00 am  
Setup for Poster Session 1 – **Room 213**

8:00 am – 12:00 pm  
Registration/Check-In\(^1\) – Lobby

\(^1\)All presentations will be loaded onto our computers at this time

8:30 am – 8:45 am  
Opening Ceremony – **Conference Room**

**Welcoming Remarks**

Dr. Zac Loughman, President, West Virginia Academy of Science  
Dr. Stephen Greiner, President, West Liberty University

**Plenary Session**

8:45 am – 9:25 am  
Dr. Gary Rankin, “Biomedical Research in West Virginia: Yesterday, Today and Tomorrow”

9:25 am – 10:05 am  
Dr. Tom Pauley, “Life and Times of a West Virginia Herpetologist: 52 Years of Searching Hollows and Ridges”

10:05 am – 10:20 am  
Dr. Matt Lamanna, “New Fossil Discoveries from the End of the Age of Dinosaurs in Antarctica”

11:00 am – 11:15 am  
Judges and Moderators Meeting – **Room 208**

11:15 am – 2:15 pm  
Vendor Exhibits on Display – Lobby

11:15 am – 12:15 pm  
Poster Session – **Room 213**

**Posters must be removed by 12:15**

12:15 pm – 1:15 pm  
Lunch (in any room) & Setup for Poster Session 2 (Even Numbers)

1:15 pm – 2:15 pm  
Poster Session 2 – **Room 213**

1:15 pm – 1:45 pm  
WVAS Annual Business Meeting – **Room 208**

2:30 pm – 3:30 pm  
Oral Presentations Session 1 – **Rooms 208, 209, 210, 212, 225**

**Afternoon Break**

3:30 pm – 3:45 pm  
Oral Presentations Session 2 – **Rooms 208, 209, 210, 212**

3:45 pm – 4:45 pm  
Closing Ceremony, Awards & Presentation of the Dr. John Warner Outstanding Teacher Award (Dr. Zac Loughman) – **Conference Room**

5:00 pm
Plenary Session Talks:

Title: “Biomedical Research in West Virginia: Yesterday, Today and Tomorrow”

Dr. Gary O. Rankin — WV-INBRE Principal Investigator; Professor & Chair, Department of Pharmacology, Joan C. Edwards School of Medicine, Marshall University, Huntington, WV

Dr. Rankin received his B.S. degree in Chemistry from the University of Arkansas at Little Rock in 1972, and his Ph.D. degree in Medicinal Chemistry from the University of Mississippi in 1976. He served as Postdoctoral Fellow in Pharmacology at the Medical College of Ohio in Toledo from 1976 to 1978, and joined the newly formed Marshall University School of Medicine in 1978. He has served as Assistant Professor (1978-1982), Associate Professor (1982-1985) and Professor and Chair (1986-Present) of the Department of Pharmacology. He also served as Associate Dean for Biomedical Graduate Education and Research Development (1989-1992).

Dr. Rankin's research interests are in the area of renal toxicology and include the nephrotoxicity induced by succinimides and aminochlorophenols, urotoxicity induced by halogenated anilines, renal transport of drug metabolites and the bioactivation of chemicals to nephrotoxicant species. Dr. Rankin is a member of several professional societies including the Association of Medical School Pharmacology Chairs (AMSPC; Secretary 2002-2004; President 2004-2006), Society of Toxicology (SOT), American Society for Pharmacology and Experimental Therapeutics (ASPET) and the West Virginia Academy of Sciences. He has served chaired several committees for SOT and ASPET) and has held several offices in the Ohio Valley SOT Chapter (Vice President, 1989-1990; President, 1990; Counselor, 1991-1995). He is also the Past-Chair of the Division of Toxicology of ASPET. He was a regular member of NIH TOX1 and ALTOX4 Study Sections (1994-1999) and serves as a frequent reviewer for NIH Special Study Sections (SBIR; F32s) and the newly formed PBKD Study Section. He was an Associate Editor of Toxicology and Applied Pharmacology (1995-2001) and has been an Editorial Board member for Toxicology since 1994. He has authored or co-authored over 100 peer-reviewed manuscripts, eight review articles, thirteen book chapters, and almost 200 research presentations at local, regional, national and international meetings.

Title: “Life and Times of a West Virginia Herpetologist: 52 Years of Searching Hollows and Ridges”

Dr. Thomas K. Pauley — Professor Emeritus, Marshall University, Huntington, WV

Tom is an emeritus professor at Marshall University, receiving his B.S. in Biology from Morris Harvey College (University of Charleston) in 1962. His graduate work began at Marshall where he received an M.S. in Biology in 1966 followed by his Ph.D. in Biology/Ecology at West Virginia University in 1977. Tom began his long career in education in West Virginia public schools moving to the collegiate level in 1966 beginning at Salem College. This was followed by time spent at University of Pittsburgh, Bradford leading to his 27 years of service at Marshall where he has been Professor Emeritus since 2013.
His teaching service includes Vertebrate Zoology, Ornithology, Vertebrate Natural History, Herpetology, and Conservation Biology. Tom has won numerous awards and honors including Salem college Professor of the year, having a new species of crayfish named in his honor, Cambarus pauleyi, (in 2015) and he was presented with the Life Time Achievement Award for contributions in herpetology by the United States Fish and Wildlife Service, United States Forest Service, and West Virginia Division of Natural Resources. This being the first time all three agencies in West Virginia have given their lifetime achievement award to one person. Tom has authored/co-authored 75 papers and 290 abstracts on amphibians and reptiles as well as being instrumental in the production of more than 15 books, brochures, and manuals.

Title: “New Fossil Discoveries from the End of the Age of Dinosaurs in Antarctica”

Dr. Matt Lamanna — Associate Curator of Vertebrate Paleontology, Carnegie Museum of Natural History, Pittsburgh, PA

Dr. Lamanna is an Associate Curator of Vertebrate Paleontology and the principal dinosaur researcher at Carnegie Museum of Natural History in Pittsburgh, Pennsylvania, and an Adjunct Assistant Professor in the Department of Geology and Planetary Science at the University of Pittsburgh.

Originally from the Finger Lakes region of upstate New York, Matt received his B.Sc. from Hobart College in 1997 and his Ph.D. from the University of Pennsylvania in 2004. His research interests involve exploring the effects of large-scale geographic and environmental changes on dinosaur evolution, distribution, and diversity, especially in the Southern Hemisphere continents. Within the past fifteen years, he has directed or co-directed field expeditions to Antarctica, Argentina, Australia, China, and Egypt that have resulted in the discovery of multiple new species of dinosaurs and other Cretaceous-aged organisms. Foremost among these finds is one of the largest land animals ever discovered, a 95-million-year-old titanosaurian sauropod (long-necked plant-eating dinosaur) from Egypt that Matt and colleagues named Paralititan stromeri in 2001. The discovery of Paralititan received extensive national and international media coverage and was documented in The Lost Dinosaurs of Egypt, a film that aired on the A&E network in 2002. Matt also consulted on and narrated The Science Channel’s documentary Rise of the Feathered Dragons, which chronicled his team’s discovery of exquisite new specimens of the Cretaceous bird Gansus yumenensis in northwestern China.

Matt served as the principal scientific advisor to Carnegie Museum of Natural History’s $36M Dinosaurs in Their Time exhibition renovation project. More recently, in 2014, he led a team that named Anzu wyliei, the most complete oviraptorosaurian theropod dinosaur yet found outside of Asia, and co-authored a paper that named another giant titanosaur, Dreadnoughtus schrani.
The John Warner Outstanding Teacher Award

Dr. John R. Warner, Jr. (1936-2009)

John was a professor at West Virginia Wesleyan College in the Department of Sociology and had many interests including being a contributing columnist for the Charleston Gazette, Eagle Scout, swimming instructor, painting, photography, traveling, gardening and of course his family. He was a member of the WV Academy of Science for many years, with his service to the Academy starting in 1975 when he took over the role as treasurer. His final Executive office was as our editor from 2004-2009 when single handedly he plowed through a back log of our Proceedings to bring us back on track. This effort and his long commitment to the West Virginia Academy of Science is honored in this award.

Alexa Bushovisky

Alexa is in her eighteenth year of teaching. She graduated in 1999 from West Liberty University with a Biology and General Science Education degree. In 2003, she obtained a master’s degree in Science and Math Education from Wheeling Jesuit University. Over the past thirteen years, she’s been a teacher at John Marshall School. She currently teaches AP Biology, Biology Honors, and Microbiology. She serves as advisor for the Outdoor Club, where students participate in a variety of activities such as skiing/snowboarding, hiking, white-water rafting, and zip-lining. She is co-advisor for the Blood Drive Club, which for the past two-years has been recognized in the region’s top-twenty for the most units collected. Additionally, she is a member of the National Honor Society committee and also serves on a few scholarship committees. She lives in Glen Dale, West Virginia, with her husband, John, and their two children, Aiden and Ayla.
LIST OF POSTER PRESENTATIONS - SESSION I
11:15–12:15

1 - CARLY CUNNINGHAM, STUART CANTLAY, and JOSEPH HORZEMPA, Dept. of Natural Sciences & Mathematics, West Liberty University, West Liberty, WV 26074. The Ability of VBNC F. tularensis to Replicate within THP-1 Cells.

2 - HOLLEE WINDERS, Dept. of Biology, Shepherd University, Shepherdstown, WV 25443, JORDAN MADER, Dept. of Chemistry, Shepherd University, Shepherdstown, WV 25443. Preparation of Functionalized Polystyrene Foams for Arsenic Removal.


4 - TRAVIS HARDING, AMANDA SMITH, KRYSTAL STARCHER, KRISTY HENSON. Forensic Science, Fairmont State University, Fairmont, WV 26554, and DARIA SECCURRO, School of Exercise Science & Athletic Training, West Virginia Wesleyan College, Buckhannon, WV 26201. Assessing Intraobserver & Interobserver Error in Osteometric Analysis of Skeletal Remains.

5 - MORGAN RICE, NOAH TEAFF, DEANNA M. SCHMITT, Dept. of Natural Sciences & Mathematics, West Liberty University, West Liberty, WV 26074, DONALD PRIMERANO and JAMES DENVIR, Genomics & Bioinformatics Core Facilities, Marshall University, Huntington, WV 25755. Role of Francisella Lipoprotein A (FlpA) in Francisella tularensis susceptibility to Resazomycins.

6 - ISAIAH SELMON-MILLER, MICHAEL WHABY and DEANNA M. SCHMITT. Dept. of Natural Sciences & Mathematics, West Liberty University, West Liberty, WV 26074. Lipoprotein Sorting as a Potential Target of Resazomycins, a Novel Family of Antibiotics.

7 - EMILY JORDAN, MARK FLOOD, Biology Program, Fairmont State University, Fairmont, WV 26554, MIKE BRAGG, City of Fairmont, Fairmont, WV 26554 and STEPHANIE DEGROOT, MS4 coordinator, Fairmont State University, Fairmont, WV 26554. Hickman Run, Fairmont, WV Stream Quality Assessment.

8 - JACLYN KITTS and DEANNA M. SCHMITT, Dept. of Natural Sciences & Mathematics, West Liberty University, West Liberty, WV 26074 Effect of Oxygen Concentration on Susceptibility of Neisseria Species to Resazomycins.

9 - SARAH JOHANSON, KINSEY GUTHRIE, and ZACHARY LOUGHMAN, Dept. of Natural Sciences & Mathematics, West Liberty University, WV 26074. Containment of a Cryptosporidium serpentis Outbreak in a Snake Collection — A Case Study.
10 - JESSE DRAPER and WEIDONG LIAO, Dept. of Computer Science, Mathematics & Engineering, School of Natural Sciences & Mathematics, Shepherd University, Shepherdstown, WV 25443. Cloud Computing & Docker Containerization: A Survey.

11 - PARKER ANTHONY, LEVI PARRETT, WEIDONG LIAO, and OSMAN GUZIDE, Dept. of Computer Science, Mathematics & Engineering, School of Natural Sciences & Mathematics, Shepherd University, Shepherdstown, WV 25443. Artificial Intelligence & Deep Learning with Tensorflow.

12 - KRISTEN HAGGERTY, STUART CANTLAY, and JOSEPH HORZEMPA, Dept. of Natural Sciences & Mathematics, West Liberty University, West Liberty, WV 26074. Francisella tularensis expressing TC3D Leader Peptide & Promotor from tdTomato Enhances Fluorescence.

13 - ADDIE SHANOR, ZACHARY LOUGHMAN and JAMES WOOD, West Liberty University, Dept. of Natural Sciences & Mathematics, West Liberty, West Virginia, 26074. Dry and Ash Free Dry Mass to Length Relationships & Salinity Stress Response of Rock Crayfish (Cambarus carinirostris) & Allegheny Crayfish (Faxonius obscurus).

14 - TYLER GOINS, MARK CORVIN and YOUNG KIM, Dept. of Applied Sciences, School of Arts & Sciences, Bluefield State College, Bluefield, WV 24701. Exploring Diastereomeric Pure Reduction Chemistry on Ketoester Amino Acid.


17 - KATHERINE CUTLIP, Dept. of Natural Sciences & Mathematics, West Liberty University, West Liberty, WV 26074. Pollinator Gardens & Generated Insect Activity.


19 - GARRETT HOOVER and JAMES WOOD, Dept. of Natural Sciences & Mathematics, West Liberty University, West Liberty, WV 26074. An Ecological Assessment of Six Major Streams in West Virginia’s Northern Panhandle.

20 - THU NGUYEN, West Virginia School of Osteopathic Medicine, Lewisburg, WV 24901, ROBERT MORRIS and HAROLD LEEPER, Wheeling WV 26003. Progressive & Severe Proliferative Diabetic Retinopathy.
21 - SUE ANN HEATHERLY, Green Bank Observatory, Green Bank, WV 24944, SARAH STARCOVIC, REBECCA RUTHERFORD, ERICA HARVEY, Dept. of Natural Sciences, Fairmont State University, Fairmont, WV 26554, KATHRYN WILLIAMSON, Dept. of Physics & Astronomy, West Virginia University, Morgantown, WV 26506, JOANNA BURT-KINDERMAN, Pocahontas County Schools, Marlinton, WV 24954, SARAH RILEY, High Rocks Educational Corporation, Hillsboro, WV 24946, CAITLIN HOWLEY, ICF International, Inc., Fairfax, VA 22031. **Findings From the First Two Years of the First2 Network.**

22 - GAGE PYLES and JOSEPH HORZEMPA, Dept. of Natural Sciences & Mathematics, West Liberty University, West Liberty, WV. **Utilizing the Francisella tularensis Live Vaccine Strain as a Novel Vaccine Platform against the Ebola Virus.**

23 - HEATHER PRICE, ELIZABETH WALTERS and JAMES WALTERS, Dept. of Applied Science & Mathematics, Bluefield State College, Bluefield, WV 24701. **Differential Expression of Phosphoenolpyruvate Carboxykinase 1 in a High Fat Diet Versus a Low Fat Diet.**

24 - WHITNEY DOTSON and JAMES WALTERS, Dept. of Applied Science & Mathematics, Bluefield State College, Bluefield, WV 24701. **Population Density of Crayfish between Two Macro Habitats.**

25 - AMBEL HARTWELL and TESFAYE BELAY, Dept. of Applied Sciences & Mathematics, Bluefield State College, Bluefield WV 24701. **Deficiency in Beta-2 Adrenergic Receptor in Mice Leads to Decreased Chlamydia muridarum Shedding in Genital Tract.**

26 - GEZELL BROWN and TESFAYE BELAY, Dept. of Applied Sciences & Mathematics, Bluefield State College, Bluefield, WV 24701. **Cold-induced Stress Alters the Dynamics of T Helper 1 & T Helper 2 Cytokine Production in a Mouse Model During Chlamydia muridarum Genital Infection.**

27 - EMMA McCLELLAND and JAMES WOOD, Dept. of Natural Sciences & Mathematics. West Liberty University. **Comparison of microbial respiration & carbon loss in the upper Ohio River & selected tributaries in the Northern Panhandle of West Virginia.**

28 - JESSE ORELL, DAKOTA PARNELL, and JAMES WALTERS, Dept. of Applied Science & Mathematics, Bluefield State College, Bluefield, WV 24701. **Designing a Microfluidic Chamber for in vivo Imaging of Larval Zebrafish.**

29 - SARAH STARCOVIC, ISACC BOYCE, KAYLEE ANDERSEN, LINDSEY LANEVE, ASHLEY RUZA, ALLISON MOORE, and ERICA HARVEY, Dept. of Natural Sciences, Fairmont State University, Fairmont, WV 26554. **Initial Testing & Adaptation of a New Method for Measuring Oxygen Evolution from Mixed Metal Oxides.**

30 - GIDEON UDOCHUKWU and V’YACHESLAV AKKERMAN, Dept. of Mechanical & Aerospace Engineering, West Virginia University, Morgantown, WV 26506. **Reynolds-Averaged Navier-Stokes (RANS) Simulation of a Staged Pressurized Oxy-coal Combustion (SPOC).**
31 - JEAN-EMMANUEL KOUADIO and QING WANG, Dept. of Computer Sciences, Mathematics & Engineering, Shepherd University, Shepherdstown, WV 25443. **Modeling the Effect of a Combinatorial Anti-CTLA Antibody & Radiation Therapy on Metastatic Melanoma.**

32 - MADISON MANLY and CHARLES ANTHONY. Dept. of Chemistry/Biochemistry West Virginia Wesleyan College, Buckhannon, WV 26201. **Apoptosis Through MMR repair in Response to Alcohol Induced DNA Damage.**

33 - WILSON LINZY and KIMBERLY BJORGO-THORNE, West Virginia Wesleyan College, Buckhannon, West Virginia, 26201. **Lyme Disease Distribution in Appalachia, 2010 – 2017.**

34 - NICHOLAS CASINGAL and BRUCE ANTHONY. Dept. of Biochemistry, West Virginia Wesleyan College, Buckhannon, WV 26201. **Neuroprotective Effects of Creatine Treatment on the Differentiation of E14 Rat Cortisol Stem Cells & Expression of GABA-ergic Neurons.**

35 - MARJORIE DARAH, Dept. of Mathematics, West Virginia University, Morgantown, WV 26505 and DR. ROXANN HUMBERT, Independent Researcher, Morgantown, WV 26505. **Defining the Characteristics of a West Virginia First Generation & Rural STEM Student.**

36 - LUISELY DOZA and JASON MILLER, Dept. of Computer Science, Mathematics, & Engineering, Shepherd University, Shepherdstown, WV 25443. **Creating Python Algorithms to Mimic R Functions from the R Stats Package.**

37 - MACKENZIE JACOBS, ELLIOT COLLINS, JAMES HEALEY, ROGER SEEBER and JOSEPH HORZEMPA. Dept. of Natural Sciences & Mathematics, West Liberty University, West Liberty, WV 26074. **Whitebark Pine Extract Augments Immune Responses that Diminish Bacterial Infection.**

38 - CAITLIN E. MURPHY and CHARLES B. ANTHONY. Dept. of Chemistry/Biochemistry, West Virginia Wesleyan College, Buckhannon, WV 26201. **Expressional Changes in Amino Acid Glutamate Transporters: 2 & 3, in the Presence of Plaque Severities in Alzheimer’s Disease.**

39 - HALEY MILLER and JAMES WOOD, Dept. of Natural Science and Mathematics, West Liberty University, West Liberty, WV 26074. **Analyzing & observing trends in water chemistry data of the Upper Ohio River watershed.**
LIST OF POSTER PRESENTATIONS - SESSION II
1:15–2:15

1 - EMILY GRIFFITH, Dept. of Psychology, Bethany College, Bethany, WV 26032. Spirituality & Self-compassion Among College Students.


3 - HUNTER PALMER, ALLISON BEVERLIN, and LAURA ROBERTSON, Dept. of Biology, Shepherd University, Shepherdstown, WV 25443. Substrate Specificity of Wood-Decay Fungi Native to the Eastern Panhandle of West Virginia.

4 - AMANDA SMITH and KRISTY HENSON, Forensic Science, Fairmont State University, Fairmont, WV 26554. Assessing Accuracy of 3D Scanning on Fingerprint Identification.

5 - CIERRA KENDALL and MARK FLOOD, Biology Program, Fairmont State University. Fairmont, WV 26554, JIM NEDROW, MIKE MURPHY, and JOHN CIESLA, Guardians of the West Fork River Watershed, Fairmont, WV 26554. Determination of Impairment of Lambert’s Run Stream.

6 - KAYLA HANCHER, DEANNA SCHMITT, and JOSEPH HORZEMPA. Dept. of Natural Sciences & Mathematics, West Liberty University, West Liberty, WV 26074. Screening of a Natural Product Library for the Discovery of Novel Leukemia Therapeutics.

7 - HAILEY MCDONOUGH, MARK FLOOD and PAMELA HUGGINS, Biology Program, Fairmont State University, Fairmont, WV 26554. The Effect of Caffeine Concentrations on the Learning & Memory Retention of Gold Fish.

8 - KRYSRAT STARCHER and KRISTY HENSON, Forensic Science, Fairmont State University, Fairmont, WV 26554. Osteological analysis of 3D printed skeletal remains.

9 - EMILY FOOTE and JASON MILLER, Dept. of Computer Science, Mathematics & Engineering, Shepherd University, Shepherdstown, WV 25443. Migrating Data from Excel to the Web Using a LAMP Stack.

10 - ANNUS ASHIQ, WEIDONG LIAO, and OSMAN GUZIDE, Dept. of Computer Science, Mathematics & Engineering, School of Natural Sciences & Mathematics, Shepherd University, Shepherdstown, WV 25443. System Administration & Database Administration in Cloud Computing Era.
11 - SAVANNAH FELIX, CHRISTOPHER FOY, OSMAN GUZIDE, and WEIDONG LIAO, Dept. of Computer Science, Mathematics & Engineering, School of Natural Sciences & Mathematics, Shepherd University, Shepherdstown, WV 25443. **4G & 5G Architecture Contrast.**

12 - JASON MILLER, GRAYSON GRZADZIELEWSKI, ERIC SPRECHER, Dept. of Computer Science, Engineering, & Mathematics, Shepherd University, Shepherdstown WV 25443, KARINA S. HORNSLIEN, and PAUL E. GRINI, Dept. of Biosciences, University of Oslo, Norway. **Bioinformatics Software for the Detection of Allelespecific Gene Expression.**

13 - DANIEL KIPPS, MARY PIASKOWSKI, JACOB LOGGINS, KAY-CEE PATTERSON and NADJA SPITZER. Dept. of Biological Sciences, Marshall University, Huntington, WV 25755. **Alteration in MAPK/ERK & Akt Signaling Following Exposure to Sublethal Silver Nanoparticles in Cultured Adult Neural Stem Cells.**

14 - RYAN NELSON, ALYSSA HUNT, and YOUNG KIM, Dept. of Applied Sciences, School of Arts & Sciences, Bluefield State College, Bluefield, WV 24701. **Progress on C-1 Diversification of Natural Product Synthesis from Commercially Available Amino Acids.**

15 - STUART CANTLAY and JOSEPH HORZEMPA, Dept. of Natural Sciences & Mathematics, West Liberty University, West Liberty, WV 26074. **Localization of the Key Cell Division Determinant FtsZ in Francisella tularensis.**

16 - QING WANG and WEIDONG LIAO, Dept. of Computer Sciences, Mathematics, & Engineering, Shepherd University, Shepherdstown, WV 25443. **The NSF S-STEM Scholarship Program at Shepherd.**


18 - YUNHAN LEI, The Linsly School, Wheeling, WV 26003. **Pre-germination Inoculation with 11 Species of Endomycorrhizal Fungi Slightly Improves Early Growth of Lettuce (*Lactuca sativa*) Seeds but not that of Radish (*Raphanus raphanistrum*) or Beans (*Phaseolus vulgaris*).**


20 - BRIAN CRUTCHLEY and QING WANG, Dept. of Computer Sciences, Mathematics & Engineering, Shepherd University, Shepherdstown, WV 25443. **Developing Software to Automate the Parameter Calibration of a Cancer Model.**
21 - BRIAN CRUTCHLEY, MELVIN BOWERS III, PARKER ANTHONY, and JASON MILLER, Dept. of Computer Science, Engineering, & Mathematics, Shepherd University, Shepherdstown WV 25443. Developing Virtual Reality Software to Graph 3-D Curves with Applications in College Level Mathematics Education.

22 - JENNIFER MYERS and JOSEPH HORZEMPA, Dept. of Natural Sciences & Mathematics, West Liberty University, West Liberty, WV 26074. The Role of FTL_1229 During Erythrocyte Invasion by Francisella tularensis.


AMANDA CASTO, Dept. of Psychology, Bethany College, Bethany, WV 26032. The Relationship Between Alcohol Consumption & Myers-Briggs Personality Types.


26 - EMILY HUFF and JAMES WOOD, Dept. of Natural Sciences & Mathematics, West Liberty University, West Liberty, WV 26074. E. coli in the Ohio River & its Tributaries.


28 - REBECCA RUTHERFORD, JACK JOHNSTON, ERICA HARVEY, Dept. of Natural Sciences, Fairmont State University, Fairmont, WV 26554, and BLAKE MERTZ, Dept. of Chemistry, West Virginia University, Morgantown, WV 26506. Modeling Detergent Applications Using Molecular Dynamics.

29 - KRISTIANA SKLIOUTOVSKAYA-LOPEZ, Dept. of Natural Sciences, University of Charleston, Charleston, WV 25304, JACALINE PARKMAN and JUNG HAN KIM, Dept. of Biomedical Sciences, Joan C. Edwards School of Medicine, Marshall University, Huntington, WV 25755. Ucp1 & Metabolism-related Gene Expression Response to High Fat Diets in Brown Adipose Tissue of TALLYHO/JngJ vs. C57BL/6J Mice.

30 - STEVEN SNEDEGAR and HEATHER ARNETT, Dept. of Biology, University of Charleston, Charleston, WV 25304. Fatal & Behavioral Effects that Household Cleaners Pose to Pets.
32 - SOMMER DILLY and AIDA JIMENEZ ESQUILIN, Dept. of Natural Sciences & Mathematics, University of Charleston, Charleston, WV 25304. Effects of Sargassum Amendment in Soil Health Parameters in a West Virginia Agricultural Soil.

33 - LUKAS SAMARGO, MASON BENCHOFF, KIMBERLY BJORGO-THORNE, Dept. of Biology, West Virginia Wesleyan College, Buckhannon, West Virginia, 26201, THOMAS MCINTOSH and BRUCE ANTHONY, Dept. of Chemistry/Biochemistry, West Virginia Wesleyan College, Buckhannon, WV 26201. The Effect of Various Alcohol Dosages on Neural Vesicle Packaging & GABA Receptors.

34 - CRISTAL ESPINOSA and CHARLES B ANTHONY, West Virginia Wesleyan College, Buckhannon, WV 26201. Ischemic Stroke Induction by Glutamate Excitotoxicity.

35 - EBONIE T. HICKS and KIMBERLY A. BJORGO-THORNE. Dept. of Biology & Environmental Science, West Virginia Wesleyan College, Buckhannon, WV 26201. Connecting the ticks – highways as potential corridors for Lyme transmission.

36 - JACOB PANCAKE, JENNIFER HICKMAN, DEANNA M. SCHMITT. Dept. of Natural Sciences & Mathematics, West Liberty University, West Liberty, WV 26074, DONALD PRIMERANO and JAMES DENVIR, Genomics & Bioinformatics Core Facilities, Marshall University, Huntington, WV. Determining the role of the pilID gene in Francisella tularensis susceptibility to resazomycins.

37 - ELI HENDERSON, DAN MEYER and ZACHARY LOUGHMAN. West Liberty University, Dept. of Natural Sciences & Mathematics, West Liberty, WV 26074. Ecology of Nerodia sipeodon (Common Watersnake) in North Fork Creek, Ohio County, West Virginia.

38 - ELISHA PIDCOCK, SHERICE GEORGE, & RUTH A. CONLEY, Biology Dept., Shepherd University, Shepherdstown, WV 25443. A Description of Broadband Hisses produced by Princisia vanwaerbecki.

List of Oral Presentations - Session I
2:30–3:30

Room 208 Topic: Astacology
Moderator – Dr. Holly Racine

2:30–2:45 CHRISTOPHER VOPAL and ZACHARY LOUGHMAN Dept. of Natural Sciences and Mathematics, West Liberty University, West Liberty, WV 26074. Life History of an Imperiled Appalachian Crayfish Species, Cambarus callainus (Big Sandy Crayfish).

2:45–3:00 RILEY AULICK, ZACHARY LOUGHMAN, EMMY DELEKTA, GREG MEYERS, Department of Natural Science and Mathematics, West Liberty University, West Liberty, WV 26074, BRONWYN WILLIAMS, North Carolina Museum of Natural Sciences, Non-Molluscan Unit, Raleigh, NC 27601, and T. R. RUSS, North Carolina Wildlife Resources Commission, Raleigh, NC 27699. Range wide conservation assessment and analysis of land use impact on Cambarus spicatus (Broad River Spiny Crayfish).

3:00–3:15 NICOLE SADECKY and ZACHARY LOUGHMAN, Dept. of Natural Sciences and Mathematics, West Liberty University, West Liberty, WV 26074. Identifying Habitat Utilization and Movement of a Federally Endangered Narrow Endemic Crayfish Species, Cambarus veteranus (Guyandotte River crayfish) via Radio Telemetry.

3:15–3:30 ERIC TIDMORE and ZACHARY LOUGHMAN, Department of Natural Sciences and Mathematics, West Liberty University, West Liberty, WV 26074. Defining broad scale habitat associates for an imperiled crayfish, Cambarus veteranus.
Room 209  Topic: Botany  
Moderator – Dr. Roger Seeber

2:30–2:45  SCOTT WENTZ, and JEREMY KEENE, Dept. of Science and Mathematics, Glenville State College, Glenville, WV 26351, **Towards a Revision of Diastema Within Central America.**

2:45–3:00  COLTON RING, Dept. of Science and Mathematics, Glenville State College, Glenville, WV 26506. **Confirmation of the New Genus Pseudodiastema.**

3:00–3:15  AARON ROBINSON, COLLEEN NOLAN, and CAROL ZYGAR PLAUTZ, Dept. of Biology, Shepherd University, Shepherdstown, WV 25443. **The Effects of Roundup and its Chemical Constituents on Learning and Long-Term Memory Consolidation in Lymnaea palustris.**

3:15–3:30  Unassigned

Room 225  Topic: Computer Science & Engineering  
Moderator – Dr. Jacqueline Cole

2:30–2:45  CHRISTOPHER FOY, SAVANNAH FELIX, OSMAN GUZIDE, Department of Computer Science, Mathematics and Engineering, School of Natural Sciences and Mathematics, Shepherd University, Shepherdstown, WV 25443. **Signal Intelligence (SIGINT).**

2:45–3:00  GIDEON UDOCHUKWU and V’YACHESLAV AKKERMAN, Department of Mechanical and Aerospace Engineering, West Virginia University, Morgantown, WV, 26506. **Numerical simulations towards optimizing the burner design for efficient staged pressurized oxy-coal combustion.**

3:00–3:15  LATEEF KAREEM, and V’YACHESLAV AKKERMAN Dept. Mechanical & Aerospace Engineering, West Virginia University, Morgantown, WV 26506. **An Alternative Approach to Describe Flame Acceleration in Micro-Tubes Due to Wall Friction.**

3:15–3:30  JUN SEON LEE and SEUNG HO HONG, Dept. of Civil and Environmental Engineering, West Virginia University, Morgantown, WV 26506. **Application of various shear stress calculation methods with respect to different bridge abutment lengths.**
Room 212  Topic: Microbiology
Moderator – Mr. Jeremy Dann

2:30–2:45  MICHAEL WINTERS, MELANIE SAL, KIMBERLY BJORGO-THORNE. West Virginia Wesleyan College, Department of Biology and Environmental Science, 59 College Avenue, Buckhannon, WV 26201. Occurrence of Borrelia burgdorferi in tick populations of Upshur County, West Virginia.

2:45–3:00  BENJAMIN LANHAM and JONATHAN GILKERSON, Dept. of Chemistry, Shepherd University, Shepherdstown, WV 25443. Expression and purification of AtRALF1 from Escherichia coli.

3:00–3:15  JUNE BRAUNLICH, JORDGE LAFANTASIE, LUKE HUGGINS, Dept. of Biology, West Virginia Wesleyan College, 59 College Avenue, Buckhannon, WV, 26201. Antimicrobial Activity Found in Appalachian Moss.

3:15–3:30  RHIANNON MACOM and JOSEPH HORZEMPA, Department of Natural Sciences and Mathematics, West Liberty University, WV, 26074. The Role of FTL_1228 in Erythrocyte Invasion by Francisella tularensis.

Room 210  Topic: Science Education & Engineering
Moderator – Dr. Karen Kettler

2:30–2:45  KENAN HATIPOGLU, Dept. of Electrical and Computer Engineering, West Virginia University Institute of Technology, Beckley, WV 25801 and YOGENDRA PANTA, Dept. of Mechanical Engineering, West Virginia University Institute of Technology, Beckley, WV 25801, Deployment of E-Learning modules to foster entrepreneurial mindset among engineering students at WVU Tech.

2:45–3:00  YOGENDRA PANTA, Dept. of Mechanical Engineering, West Virginia University Institute of Technology, Beckley, WV 25801, and KENAN HATIPOGLU, Dept. of Electrical and Computer Engineering, West Virginia University Institute of Technology, Beckley, WV 25801. Implementation of "E-Learning modules – entrepreneurial mindset in engineering" to Foster Teaching and Learning Environment at WVU Tech.

3:00–3:15  ANGELA MCCASKILL, Dept. of Accounting and Management, West Virginia University Institute of Technology, Beckley, WV 25801, YOGENDRA PANTA, Dept. of Mechanical Engineering, West Virginia University Institute of Technology, Beckley, WV 25801, KENAN HATIPOGLU, Dept. of Electrical and Computer Engineering, West Virginia University Institute of Technology,
Beckley, WV 25801 and SANISH RAI, Dept. of Computer Science and Information Systems, West Virginia University Institute of Technology, Beckley, WV 25801. Faculty Cohort on Teaching and Learning at WVU Tech.

3:15–3:30 AARON SUTTON and LESLIE HOPKINSON, Dept. of Civil and Environmental Engineering, West Virginia University, Morgantown, WV, 26506. Evaluating design criteria for high hazard dams in a changing climate.

LIST OF ORAL PRESENTATIONS - SESSION II

3:45–4:45

Room 212  Topic: Computer Science & Engineering
Moderator – Dr. Carol Plautz

3:45–4:00 FURKAN KODAKOGLU, V’YACHESLAV AKKERMAN, Department of Mechanical and Aerospace Engineering, West Virginia University, Morgantown, WV 26506. Towards an analytical description of propane-air premixed combustion in gaseous and gaseous-dusty industrial applications.

4:00–4:15 JASON MILLER, GRAYSON GRZADZIELEWSKI, ERIC SPRECHER Department of Computer Science, Engineering, and Mathematics, Shepherd University, Shepherdstown WV 25443, KARINA S. HORNSLIEN and PAUL E. GRINI, Department of Biosciences, University of Oslo, Norway. Bioinformatics Software for the Detection of Allele-specific Gene Expression.

4:15–4:30 FURKAN KODAKOGLU, MOHAMMED ALKHABBAZ, OLATUNDE ABIDAKUN, V’YACHESLAV AKKERMAN, Department of Mechanical and Aerospace Engineering, West Virginia University, Morgantown, WV 26506. Effect of Wall Conditions and Lewis Number on Finger-shaped Flame Acceleration in Channels.

4:30–4:45 ANTHONY RATLEDGE and WEIDONG LIAO, Department of Computer Science, Mathematics and Engineering, School of Natural Sciences and Mathematics, Shepherd University, Shepherdstown, WV 25443. Biologically Inspired Optimization Solutions for Homeostatic Maintenance.
Room 208  Topic: Ecology
Moderator – Dr. John Steffen

3:45–4:00  DAN MEYER, ELIJAH HENDERSON, and ZACHARY LOUGHMAN. Dept. of Natural Sciences and Mathematics, West Liberty University, West Liberty, WV 26074. **Prey Selection in the Queen snake, Regina septemvittata, in Streams of the Northern Panhandle of West Virginia, U.S.A..**

4:00–4:15  SAMUEL CANFIELD and JAMES WOOD, Dept. of Natural Sciences and Mathematics, West Liberty University, West Liberty, WV 26074. **Investigating the Physiochemical niche of the Macrophyte Podostemum ceratophyllum.**

4:15–4:30  TANYA KHAN, ZACHARY LOUGHMAN, Department of Natural Sciences and Mathematics, West Liberty University, West Liberty, WV 26074 and DAVID LIEB, Western Pennsylvania Conservancy and Pennsylvania Fish and Boat Commission, Bellefonte, PA 16823. **Conservation and Distribution of Creaserinus fodiens (Digger Crayfish) in Pennsylvania.**

4:30–4:45  EMILY SETSER, AUSTIN HUMBERT, JAMES JOY, Dept of Biological Sciences, Marshall University, Huntington, WV 25755, and RITA RIO, Dept of Biology, West Virginia University, Morgantown, WV, 26506. **Aggregation patterns of sensory sensillae in the food canal and cibarium of the tsetse fly, Glossina morsitans morsitans.**

Room 210  Topic: Microbiology & Molecular Biology
Moderator – Dr. Luke Huggins

3:45–4:00  JADA VOELLINGER AND JOSEPH HORZEMPA, Department of Natural Sciences and Mathematics, West Liberty University, West Liberty, WV 26074. **Validation of the antimicrobial activity of Nymphaea odorata extract.**

4:00–4:15  ELLIOT COLLINS, DEANNA SCHMITT, KRISTEN SIKORSKY, ANTHONY SAKO, JOSEPH HORZEMPA, Department of Natural Sciences and Mathematics, West Liberty University, West Liberty, WV 26074, FRANCISCO LEON and MELISSA JACOB, National Center for Natural Products Research, University of Mississippi, University, MS 38677. **Immunostimulatory Activity of Dillapiole Isolated from Fennel Root.**

4:15–4:30  MORGAN CROW and QING WANG, Dept of Computer Sciences, Mathematics and Engineering, Shepherd University, Shepherdstown, WV, 25443. **Stability Analysis of a Tumor-Free Equilibrium of a Tumor Growth Model in Response to a Combinatorial Anti-Nodal Antibody and Chemotherapy.**

4:30–4:45  Unassigned
Room 209  Topic: Taxonomy  
Moderator – Dr. Jonathan Gilkerson

3:45–4:00  JOHN STEFFEN, Dept. of Biology, Shepherd University, Shepherdstown, WV 25443. You are MORE than what you eat! The dietary basis to painted turtle spot and stripe color.

4:00–4:15  CHERE DAVIS, Dept of Science and Mathematics, Glenville State College, Glenville, WV, 26035. Evolutionary Analysis of Monopyle (Gesneriaceae) from Panama.

4:15–4:30  EMMY DELEKTA, ZACHARY LOUGHMAN, Department of Natural Sciences and Mathematics, West Liberty University, West Liberty, WV 26074, and BRONWYN WILLIAMS, North Carolina Museum of Natural Sciences, Research Laboratory, Raleigh, NC 27669. Redescription and Circumscription of the Acuminate Crayfish, Cambarus acuminatus Faxon, 1884.

4:30–4:45  Unassigned