

2021

WEST VIRGINIA ACADEMY OF SCIENCE 95th Annual Meeting

April 10, 2021

Hosted by the WVAS Executive Committee



West Virginia Academy of Science

95th Annual Meeting

April 10, 2021

EVENT SPONSORS:



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Welcome to the WVAS Annual Meeting!

On behalf of the WVAS Executive Committee, we welcome you to the 2021 West Virginia Academy of Sciences Annual Meeting. We are excited to provide a virtual venue for this meeting and hope you have an engaging and rewarding experience as you immerse yourself in scientific discoveries and discussions.

We are delighted to host this event, and would like to thank our sponsors: W.E.L. Instrument Company®, Fisher Scientific®, First2 Network®, and Aquaneering®. We are also grateful to our many volunteers for their selfless service.

We truly hope you have a wonderful and productive meeting.

- Dr. James Walters
President, WVAS Executive Committee

95th annual West Virginia Academy of Science meeting Schedule of Events

Check your email for the Zoom® link to the meeting

Opening Ceremony

9:00-9:15 Welcoming Remarks:

James Walters, Ph.D., West Virginia Academy of Science Director
Introduce Organizing Staff: WVAS executive committee

9:15-10:10 Plenary Session: Main Room on Zoom

NOTE: All presentations will be introduced by the Moderator who will allow the presenters to share. Participants will be muted and questions for talks can be asked in the chat; moderators will ask your questions.

9:15-9:35

Plenary Speaker

Werner Geldenhuys, Ph.D., MS
Associate Professor; Associate Chairperson Department of Pharmaceutical Sciences, WVU
Title: Targeting the mitochondrial protein MitoNEET in stroke

9:35-10:10

KeyNote Speaker

Philip D. Stahl, Ph.D.,
Edward Mallinckrodt Jr. Professor Emeritus, Cell Biology and Physiology. Washington
University School of Medicine in St. Louis.
Title: Exosomes—The rise of a new paradigm of cellular communication

10:10-10:30 Break: Lobby/ Main Room on Zoom

Check out the First2 Network Breakout room #1 for engaging information about persisting in science in West Virginia

10:30-11:00

Plenary Speaker

Shantá D. Hinton, Ph.D.
Associate Professor of Biology, Department of Biology, William and Mary
A decade of the emerging roles of pseudophosphatase MK-STYX

11:00 – 12:00 Oral Presentations Session 1:

Breakout Room 1: Forensics

Abstract numbers 14, 15, 16, and 17

Moderator: Sara J. Sawyer, Ph.D.

Breakout Room 2: Biology (Microbiology and Immunology)

Abstract numbers 22, 27, 28, and 29

Moderator: Joseph Horzempa, Ph.D.

Breakout Room 3: Computer Science/ Science Education and Engineering

Abstract numbers 4, 5, 6, and 35

Moderator: Chuck Puckett, MS

Breakout Room 4: Anthropology, Environmental Science and Stream Ecology

Abstract numbers 1, 11, 12, and 13

Moderator: Elizabeth Walters, MS

Breakout Room 5: Biomedical (Nutrition/Cancer/Mental Health)

Abstract numbers 19, 20, 30, and 31

Moderator: David O'Dell, MS, Ph.D.

Breakout Room 6: Science Education: Session A

Abstract numbers 41, 38, 43, and 44

Moderator: Erica Harvey Ph.D.

12:00 – 1:00 Lunch: Break out rooms 1-6

Mingle at a virtual table and chat while you eat.

12:30 – 1:00 WVAS Annual Business Meeting: Breakout room 5

12:30- 1:00 Career Makers: Breakout room 6

Moderator: Elizabeth Walters, MS, Visiting Professor of Biology, Bluefield State College

Meet our panel of professionals as they discuss their journeys to diverse scientific careers.

- Beth Chambers, MS, MA, Herbarium Curator, Biology Department, William and Mary
- Shantá D. Hinton, Ph.D., Associate Professor of Biology, William and Mary
- Andrea McGlynn, MS, Biostatistician, Navy Medicine Readiness & Training Command
- Amy Troy, Ph.D., Senior Scientific Director at PRECISIONscientia

1:00 – 2:00 Oral Presentations Session 2:

Breakout Room 1: Biology (Environmental Science)

Abstract numbers 7, 8, 9, and 10

Moderator: Joseph Horzempa, Ph.D.

Breakout Room 2: Biology (Microbiology)

Abstract numbers 23, 24, 25, and 26

Moderator: David O'Dell, Ph.D.

Breakout Room 3: Chemistry, Health Science and Nutrition

Abstract numbers 2, 3, 18, and 21

Moderator: James Walters, Ph.D.

Breakout Room 4: Science Education: session B

Abstract numbers 32, 33, 34, and 40

Moderator: Erica Harvey, Ph.D.

Breakout Room 5: Science Education: session C

Abstract numbers 36, 37, 38, and 39

Moderator: TBA

2:00 – 2:30 Break:

Lobby open/ Poster navigation instructions on main meeting Zoom screen

First2 Workshop: Breakout room 5

Abstract # 42: A hands-on session about using improvement science principles (scientific method) to make changes to classroom and research group practices to better serve students. Students are encouraged to participate.

2:30 – 4:30 Poster Presentations: Virtual. YouTube® presentation links will be available on poster abstracts within the 95th annual West Virginia Academy of Science meeting website. Go to <http://pwvas.org/index.php/pwvas/pages/view/meetings> , search for the abstract you wish to view, and click the link. Interact with presenters on the Zoom Chat by Zoom Private Messaging.

4:30 – 4:45 Closing Ceremony and Remarks

James Walters, Ph.D., West Virginia Academy of Science Director

Door Prizes Drawing: Sponsored by First2 Network

LIST OF ORAL PRESENTATIONS - SESSION I

11:00 AM – 12:00 PM

Breakout Room 1: Forensics

Abstract numbers 14, 15, 16, and 17

Moderator: Sara J. Sawyer, Ph.D.

11:00 AM Abstract # 14 Jonathan Prince & Kristy Henson, Fairmont State University, Fairmont, WV 26554. **Skeletal weathering on remains frozen for different time intervals update.**

11:15 AM Abstract # 15 Brittany Sharps, Fairmont State University, Fairmont, WV 26554. **Using gun blue to develop fingerprints off of fired and unfired cartridges.**

11:30 AM Abstract # 16 Cassandra Whitlatch, Fairmont State University, Fairmont, WV 26554. **Blood spatter impact accuracy on nonporous surfaces and how it affects criminal investigation updated.**

11:45 AM Abstract # 17 Krystal Starcher & Kristy Henson, Fairmont State University, Fairmont, WV 26554. **Analysis of metabolic bone disease in 3D printed skeletal remains.**

Breakout Room 2: Biology (Microbiology and Immunology)

Abstract numbers 22, 27, 28, and 29

Moderator: Joseph Horzempa, Ph.D.

11:00 AM Abstract # 22 Katelyn Goins & Tesfaye Belay, Bluefield State College, Bluefield, WV 24701. **The role of bone marrow-derived dendritic cells in stressed β 2-adrenergic receptor knockout male mice during *Chlamydia muridarum* lung infection.**

11:15 AM Abstract # 27 Raenel Crenshaw & Tesfaye Belay, Bluefield State College, Bluefield, WV 24701. **Decreased *Chlamydia muridarum* genital infection and improved immune response in a β 2-adrenergic receptor knockout mouse stress model.**

11:30 AM Abstract # 28 Luke D'Cunha, Stuart Cantlay & Joseph Horzempa, West Liberty University, West Liberty, WV 26074. **Insight into *Francisella tularensis*-erythrocyte interactions.**

11:45 AM Abstract # 29 Stuart Cantlay, Kristen Haggerty & Joseph Horzempa, West Liberty University, West Liberty, WV 26074. **OpiA, a type six secretion system substrate, localizes to the cell pole and plays a role in bacterial growth and viability in *Francisella tularensis* LVS.**

Breakout Room 3: Computer Science/ Science Education and Engineering

Abstract numbers 4, 5, 6, and 35

Moderator: Chuck Puckett, MS

11:00 AM Abstract # 4 Trey Castrechino & Osman Guzide, Shepherd University, Shepherdstown, WV 25443. **Personal cloud computing.**

11:15 AM Abstract # 5 Samuel Sloboda & Osman Guzide, Shepherd University, Shepherdstown, WV 25443. **Is Apple's new M1 chip a game changer in computing?**

11:30 AM Abstract # 6 Jean-Emmanuel Kouadio & Osman Guzide, Shepherd University, Shepherdstown, WV 25443. **The use of artificial intelligence in security system and everyday life and creating a security system using basic inexpensive devices (Raspberry Pi).**

11:45 AM Abstract # 35 Yogendra Panta, Kenan Hatipoglu & Sanish Rai , West Virginia University Institute of Technology, Beckley, WV 25801. **Challenges, successes and lessons learned in implementing active learning during the COVID-19 pandemic era.**

Breakout Room 4: Anthropology, Environmental Science and Stream Ecology

Abstract numbers 1, 11, 12, and 13

Moderator: Elizabeth Walters, MS

11:00 AM Abstract # 1 Kristy Henson, Fairmont State University, Fairmont, WV 26554. **Historical weather data as a biocultural indicator of ancient vitamin D deficiency in human skeletal remains in the United States.**

11:15 AM Abstract # 11 Destinee Davis, Taylor Whitson, James Krochmal, Kaine Diehl & Zachary Loughman, West Liberty University, West Liberty, WV 26074. **Advancements in the understanding of appalachian primary burrowing crayfish ecology and habitat usage with a focus on *Cambarus monongalensis*.**

11:30 AM Abstract # 12 Garrett Hoover & James Wood, West Liberty University, West Liberty, WV 26074. **Analysis of localized water chemistry and land use**

drivers of macroinvertebrate community structure in the Upper Ohio Watershed using multivariate modeling and ordination techniques.

11:45 AM Abstract # 13 Abigail O'Connor & James Wood, West Liberty University, West Liberty, WV 26074. **Investigation of environmental and land use influence on watershed bacterial contamination using *E. coli* quantification and 16s identification.**

Breakout Room 5: Biomedical (Nutrition/Cancer/Mental Health)

Abstract numbers 19, 20, 30, and 31

Moderator: David O'Dell, MS, Ph.D.

11:00 AM Abstract # 19 Adeoluwa Adeluola, A.R.M. Ruhul Amin & Timothy Long, Marshall University, Huntington, WV 25755. **Mechanism of apoptosis induced by actinomycin D in upper aerodigestive tract cancers.**

11:15 AM Abstract # 20 Syed Monis Ali & James Walters, Bluefield State College, Bluefield, WV 24701. **CHD8 mutation in larval Zebrafish (*Danio rerio*) impacting peristalsis rate and total coordination of the gut.**

11:30 AM Abstract # 30 Jesse Orell, Dakota Parnell, Austin Coleman, Chandler Russell & James Walters, Bluefield State College, Bluefield, WV 24701. **Constructing a high throughput novel microfluidic slide for in vivo imaging of larval Zebrafish (*Danio rerio*).**

11:45 AM Abstract # 31 Lauryn Antolock, West Virginia Wesleyan College, Buckhannon, WV 26201 and Cam'Ron Allen & Kristy Henson, Fairmont State University, Fairmont, WV 26554. **Relation of vitamin D and UV data with homicide/suicide rates in states north/south of the Mason-Dixon Line.**

Breakout Room 6: Science Education: Session A

Abstract numbers 41, 38, 43, and 44

Moderator: Erica Harvey Ph.D.

11:00 AM Abstract # 41 Caitlin Howley, ICF International Incorporated, Fairfax, VA 22031. **Learning to improve: early evaluation of the First2 Network.**

11:15 AM Abstract # 38 Michelle Richards-Babb, West Virginia University, Morgantown, WV 26506. **The undergraduate research pipeline at West Virginia University.**

- 11:30 AM Abstract # 43 Lindsey Walck, Amanda Smith & Erica Harvey, Fairmont State University, Fairmont, WV 26554. **Integrating co-requisite math for STEM student success.**
- 11:45 AM Abstract # 44 Summer Kuhn, Health Sciences and Technology Academy, West Virginia University, Shady Spring, WV, 25918, Kas Kasten & Sean Freeland, HSTA, Morgantown, WV 26506, Merge McMillion, HSTA, Exchange, WV 26619, Cathy Morton, HSTA, Webster Springs, WV 26288, and Ann Chester, HSTA, Morgantown, WV 26506. **A look into HSTA student success initiatives directed at increasing college persistence and success among at-risk students.**

12:00 – 1:00 Lunch: Break out rooms 1-6

12:30 – 1:00 WVAS Annual Business Meeting: Breakout room 5

12:30- 1:00 Career Makers: Breakout room 6

LIST OF ORAL PRESENTATIONS - SESSION II

1:00 PM – 2:00 PM

Breakout Room 1: Biology (Environmental Science)

Abstract numbers 7, 8, 9, and 10

Moderator: Joseph Horzempa, Ph.D.

- 1:00 PM Abstract # 7 Emmy Delekta & Zachary Loughman, West Liberty University, West Liberty, WV 26074 and Bronwyn Williams, North Carolina Museum of Natural Sciences, Raleigh, NC 27601. **The conservation concern of *Faxonius* sp. (Decapoda: Cambaridae) from the Lower Tennessee-Beech subbasin.**
- 1:15 PM Abstract # 8 Catherine Morris & Mark Watson, University of Charleston, Charleston, WV 25304. **Impacts of *Microstegium vimineum* invasion on central West Virginia native plants.**
- 1:30 PM Abstract # 9 Emma McClelland & Zachary Loughman, West Liberty University, West Liberty, WV 26074. **Assessment of snail communities in fragmented habitats.**

1:45 PM Abstract # 10 Theresa Prochaska & Zachary Loughman, West Liberty University, West Liberty, WV 26074. **Tick surveillance in the Northern Panhandle of West Virginia.**

Breakout Room 2: Biology (Microbiology)

Abstract numbers 23, 24, 25, and 26

Moderator: David O'Dell, Ph.D.

1:00 PM Abstract # 23 Rylee Laya, Steven Roof, Mark Flood & Greg Popovich, Fairmont State University, Fairmont, WV 26554. **The analysis of the antimicrobial properties of copper alloys compared to stainless steel using a readily accessible procedure.**

1:15 PM Abstract # 24 Katherine Phillips & Joseph Horzempa, West Liberty University, West Liberty, WV 26074. **The effect of dillapiole on *Acinetobacter baumannii*, a Gram-negative opportunistic pathogen.**

1:30 PM Abstract # 25 Kendall Souder, Michael Whaby, Jennifer Hickman & Deanna Schmitt, West Liberty University, West Liberty, WV 26074 and Donald Primerano & James Denvir, Marshall University, Huntington, WV 25755. **Contribution of *Francisella tularensis* FTL_1306 (dipA) in resazomycin susceptibility.**

1:45 PM Abstract # 26 Justin Rice, Emily Young, Kailee Cunningham & Deanna Schmitt, West Liberty University, West Liberty, WV 26074. **Effect of oxygen concentration on *Neisseria gonorrhoeae* susceptibility to resazomycins.**

Breakout Room 3: Chemistry, Health Science and Nutrition

Abstract numbers 2, 3, 18, and 21

Moderator: James Walters, Ph.D.

1:00 PM Abstract # 2 Ariel Quesenberry, Fairmont State University, Fairmont, WV 26554. **Quantification of formaldehyde in hair creams using chromogenic methods.**

1:15 PM Abstract # 3 Peydan McVicker, Matthew Scanlon, & Kristy Henson, Fairmont State University, Fairmont, WV 26554. **The development and composting of cellulose-based bioplastic derived from hemp fibers.**

- 1:30 PM Abstract # 18 Jordan Smith, Richard Tandoh & James Walters, Bluefield State College, Bluefield, WV 24701. **The effects of a high-fat diet vs. high-fat diet plus dihydronortanshinone in larval zebrafish (*Danio rerio*).**
- 1:45 PM Abstract # 21 Samuel Tetteh-Quarshie & Cynthia Jones, Marshall University, Huntington, WV 25755. **The effect of high sugar diet on adipokine expression in 3T3-L1 cells and weight in mice.**

Breakout Room 4: Science Education: Session B

Abstract numbers 32, 33, 34, and 40

Moderator: Erica Harvey, Ph.D.

- 1:00 PM Abstract # 32 Kenan Hatipoglu, Sanish Rai & Yogendra Panta, West Virginia University Institute of Technology, Beckley, WV 25801. **NSF S-STEM project initiation: supporting undergraduate cohorts of career-ready engineering and science scholars (SUCCESS) project at WVU Tech.**
- 1:15 PM Abstract # 33 Scott Brothers & Lisa Reilly, Bethany College, Bethany, WV 26032. **Efficacy of a combined lecture/laboratory model for student performance and engagement in introductory chemistry courses.**
- 1:30 PM Abstract # 34 Sean Harwell & Erica Harvey, Fairmont State University, Fairmont, WV 26554 and Michelle Richards-Babb, Hunte Moore, Jaimee Pyron & Leah McJilton, West Virginia University, Morgantown, WV 26506, and Erika Klose, West Virginia Department of Education, Charleston, West Virginia 25305. **STEM resource database for WV.**
- 1:45 PM Abstract # 40 Sophie De Saint Georges & Sue Ann Heatherly, Education and Public Outreach, Green Bank Observatory, Green Bank, WV, 24944. **The West Virginia science public outreach team: impacts of an undergraduate STEM outreach program.**

Breakout Room 5: Science Education: session C

Abstract numbers 36, 37, 38, and 39

Moderator: TBA

- 1:00 PM Abstract # 36 Caroline Thompson & Kristy Henson, Fairmont State University, Fairmont, WV 26554. **Comparing virtual and face-to-face forensic science labs.**

1:15 PM Abstract # 37 Greg Popovich, West Virginia Wesleyan College, Buckhannon, WV 26201 and Kristy Henson, Fairmont State University, Fairmont, WV 26554. **Teaching nutrition concepts using pop culture: why zombies crave brains.**

1:30 PM Unassigned

1:45 PM Abstract # 39 Sanish Rai, West Virginia University Institute of Technology, Beckley, WV 25801. **Computer science labs with social distancing.**

LIST OF POSTER PRESENTATIONS

2:30 – 4:30

- Poster # 1 Nicolas Null, Tyler Kibler & Elizabeth Lowe, West Virginia University Institute of Technology, Beckley, WV 25801. **Using machine learning to predict classes of astronomical data.**
- Poster # 2 Logan Hays, Dalton McGeeney & Sara Sawyer, Glenville State College, Glenville, WV 26351. **Temperature-induced alteration of the extracellular matrix in the tropical sea anemone, *Exaiptasia pallida*.**
- Poster # 3 John Barber & Raymond Holsapple, West Liberty University, West Liberty, WV 26074. **Using neural networks for molecular energy regression.**
- Poster # 4 Jacob Boone & Weidong Liao, Shepherd University, Shepherdstown, WV 25443. **A face mask and body temperature detection system using Raspberry Pi.**
- Poster # 5 Caitlin de Vries, West Liberty University, West Liberty, WV 26074. **Water quality monitoring for the Central Appalachian Coalfields Crayfish.**
- Poster # 6 Erin Allison & Zachary Loughman, West Liberty University, West Liberty, WV 26074. **Human dimensions of crayfish conservation in Appalachian coalfields.**
- Poster # 7 Haley Miller, West Liberty University, West Liberty, WV 26074. **Trophic partitioning of *Cambarus carinirostris*, *Cambarus robustus*, and *Faxonius obscurus* in Kings Creek, WV by stable isotope analysis.**
- Poster # 8 Carly Cunningham, West Liberty University, West Liberty, WV 26074. **Using ecological parameters to determine valuable monitoring sites for *Cambarus callainus* in eastern Kentucky, southwestern Virginia, and southwestern West Virginia.**
- Poster # 9 Katie Scott & Zachary Loughman, West Liberty University, West Liberty, WV 26074. **Specific microhabitat utilization and resource partitioning of the federally protected species of crayfish (Decapoda: Cambaridae) *Cambarus callainus* and the sympatric Cambarid species *Cambarus hatfieldi*.**
- Poster # 10 Zachary Dillard & Zachary Loughman, West Liberty University, West Liberty, WV 26074. **Big Sandy Crayfish (*Cambarus callainus*) habitat affinity in proximity to bridges and assessed via radio telemetry.**
- Poster # 11 James Krochmal, West Liberty University, West Liberty, WV 26074. **Genetic and morphological consequences of inter-haplogroup hybridization in *Faxonius virilis*.**
- Poster # 12 Kaine Diehl, West Liberty University, West Liberty, WV 26074. **A behavioral study of *Lacunicambarus thomai* in a field setting.**

- Poster # 13 Addie Shanor, Zachary Loughman & Nicole Garrison, West Liberty University, West Liberty, WV 26074. **Genetic haplotype mapping of the Allegheny Crayfish (*Faxonius obscurus*).**
- Poster # 14 Mitchel Loughman, West Liberty University, West Liberty, WV 26074. **Life history of the Rock Crayfish (*Cambarus carinirostris*).**
- Poster # 15 Taylor Whitson, West Liberty University, West Liberty, WV 26074. **The presence and impacts of pollutants on central Appalachian crayfishes.**
- Poster # 16 Natalia Omelchenko-Comer, Heather Kalb, Louella Cohen, Carley Digiacinto, Emily Giordano, Deeann Greene, Sierra Robinson, Dora Wallace, Brylee Henderson, Audrianna Taylor & Payton Knicely, West Virginia Northern Community College, Wheeling, WV 26003. **Comparison of heart rates measured in supine, prone, and sitting positions.**
- Poster # 17 Andrea Dwiggin & Holly Racine, West Liberty University, West Liberty, WV 26074. **Establishing a model for studying the effects of maternal hyperthyroidism in utero.**
- Poster # 18 Richard Tandoh, Jordan Smith & James Walters, Bluefield State College, Bluefield, WV 24701. **Comparing the BMI of Zebrafish fed on a normal diet versus a high fat diet.**
- Poster # 19 Natalia Omelchenko-Comer, Heather Kalb, Louella Cohen, Carley Digiacinto, Emily Giordano, Deeann Greene, Sierra Robinson, Dora Wallace, Brylee Henderson, Payton Knicely & Audrianna Taylor, West Virginia Northern Community College, Wheeling, WV 26003. **Age of the subjects alone does not determine the maximal heart rate or the heart rate recovery after exercise.**
- Poster # 20 Elizabeth Walters, Gabriella Hubbard, Paula Sáez Ráez, Thomas Schmieta & James Walters, Bluefield State College, Bluefield, WV 24701. **Transcriptome response of genes mitigating reactive oxygen species in Zebrafish (*Danio rerio*) larvae during dietary lipid absorption.**
- Poster # 21 Gavin Lilly & Tesfaye Belay, Bluefield State College, Bluefield, WV 24701. **Characterizing bone marrow-derived monocytes in a stressed β 2 adrenergic receptor knockout male mice during *Chlamydia muridarum* lung infection.**
- Poster # 22 Brian Crutchley & Qing Wang, Shepherd University, Shepherdstown, WV 25443. **Software developed to facilitate calibration of tumor growth models.**
- Poster # 23 Katey Burner & Qing Wang, Shepherd University, Shepherdstown, WV 25443. **Effects of a radiation therapy on tumor growth: analysis in comparison to experimental data.**
- Poster # 24 Heidi Reichert & Qing Wang, Shepherd University, Shepherdstown, WV 25443. **Effects of an anti-CTLA-4 antibody therapy on metastatic melanoma.**

- Poster # 25 Jean-Emmanuel Kouadio & Qing Wang, Shepherd University, Shepherdstown, WV 25443. **A combinatorial anti-CTLA antibody and radiation therapy on metastatic lung cancer.**
- Poster # 26 Jordan Gibson, Siena McGovern, Emily Young & Deanna Schmitt, West Liberty University, West Liberty, WV 26074. **Stability of resazurin in solution and in bacterial growth media.**
- Poster # 27 Autumn Dodson, Emily Young & Deanna Schmitt, West Liberty University, West Liberty, WV 26074. **Resazomycins alter outer membrane protein expression in *Francisella tularensis* resulting in increased antibiotic susceptibility.**
- Poster # 28 Jada Voellinger & Joseph Horzempa, West Liberty University, West Liberty, WV 26074. **Validation of the antimicrobial activity of *Nymphaea odorata* extract.**
- Poster # 29 Jasmine Lafferty, Aida Jimenez Esquilin & Desiree Evans, University of Charleston, Charleston, WV 25304. **Microbiome associated with the haustorium of *Epifagus virginiana*.**
- Poster # 30 David Hayes & Laura Robertson, Shepherd University, Shepherdstown, WV 25443. **Antibacterial activity in wild fungi collected in Jefferson County, West Virginia.**
- Poster # 31 Alexis Swan, Courtney Rosser, Cory Newman, Debra Hull & John Hull, Bethany College, Bethany, WV 26032. **Trigger words referencing sexuality: a gender gap?**
- Poster # 32 McKayla Martin, Katelyn Huck, Christien Williams, Debra Hull & John Hull, Bethany College, Bethany, WV 26032. **Trigger words and the politics of polarization.**
- Poster # 33 Yasmeene Henderson, Geanna Samol, Terron Crowder, Ioannis Bakodimos, Debra Hull & John Hull, Bethany College, Bethany, WV 26032. **What do we hear and say? Trigger words and race.**
- Poster # 34 Kaitlynn Seminsky, Madison Nicolella, Clay Yingling, Megan McDonald, Debra Hull & John Hull, Bethany College, Bethany, WV 26032. **Pandemic, trigger words, and the classroom.**
- Poster # 35 Gabby Broski, Alyssa Pettry, Kiersten Lowdermilk, Katie Conley, Amber Meadows & Kristy Henson, Fairmont State University, Fairmont, WV 26554. **Effects of personalized peer tutoring with students that are under-represented and/or in STEM fields.**
- Poster # 36 Natalia Omelchenko-Comer, Christopher Corbin & Scott Montgomery, West Virginia Northern Community College, Wheeling, WV 26003. **WVNCC innovative technology use benefits physiology instructions during Covid-19 pandemic.**
- Poster # 37 Brian Ringhiser & Zachary Loughman, West Liberty University, West Liberty, WV 26074. **Preliminary analysis of morphometric data for an ongoing autecological study of the Northern Watersnake, *Nerodia sipedon sipedon*, in a West Virginia stream.**

- Poster # 38 Kathryn Anglin-Irwin & Young Kim, Bluefield State College, Bluefield, WV 24701. **Comparison of aerobic digestion and oxidation ditch wastewater treatment systems.**
- Poster # 39 Wilson McNeil & Leslie Hopkinson, West Virginia University, Morgantown, WV 26506. **The application of WEAP in water quantity demand modeling of population centers along the Monongahela River.**
- Poster # 40 Michelle Williams & Zachary Loughman, Dept. of Natural Sciences and Mathematics, West Liberty University, West Liberty, WV, 26074, and Lori Torrini, Spirit Keeper Equine Sanctuary, Colorado Springs CO, 80864. **Target training in juvenile False Water Cobras (*Hydrodynastes gigas*).**
- Poster # 41 Sydney Ozersky & Zachary Loughman, West Liberty University, West Liberty, WV 26074. **Transfer of *Cryptosporidium* oocysts from feeder rodents to neonate snakes and its impact on parasite identification methods used by zoological institutions.**
- Poster # 42 Kaitlyn Taylor, Justin Sanclemente, Nicole Garrison & Zachary Loughman, West Liberty University, West Liberty, WV 26074. **Analysis of *Chelodina mccordi* from the Audubon Zoo, New Orleans.**