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Winners of the 2021 University-wide Poster and Creative Activity Exposition

MTSU students shine in virtual, in-person showcase of research and creative activity

MURFREESBORO, Tenn. — For Lauren Hunsicker, a psychology major at Middle Tennessee State University, presenting her research to a live audience at the annual Scholars Week Exposition was extremely meaningful.

“College is supposed to be a time where you meet different people and engage in new experiences, and we’ve all missed out on that aspect for the past year,” Hunsicker said. “Presenting ... and seeing all the incredible research projects that other students have been working on gave me the sense of community and engagement that I have needed for so long.”

Before MTSU wrapped up its Spring 2021 semester, the Office for Research and Sponsored Programs organized and hosted Scholars Week, a five-day event featuring both undergraduate and graduate student research and creative projects. It includes research poster presentations; (story continued on page 2)



**SCHOLARS
WEEK 2021**

URC'S MISSION

The Undergraduate Research Center's (URC) mission is to be the central hub for communication about undergraduate research grant programs and other related opportunities on and off campus, to distribute university funds for undergraduate research and creative projects, and to promote dissemination of results through travel grants and by offering opportunities for students to present their research findings.

MTSU students shine in virtual, in-person showcase of research and creative activity (continued)

student-produced musical, dance and drama creative performances; and a virtual awards ceremony presented by David Butler, vice provost for research.

Sixty-five students presented posters in person and 137 students presented posters online through the Symposium platform.

With university provisions allowing in-person gatherings that adhered to strict safety protocols, Jamie Burriss, program manager of the ORSP, and the Scholars Week Committee were dedicated to celebrating the students' scholarship.

"It was important to give our students the option to showcase their research and creative performances to a live audience," Burriss said of the April 12-16 event. "Many of the students are graduating and this was their final opportunity to share the fruits of their labor with friends, colleagues, parents and the campus community."

Eric Oslund, chair of the University's Scholars Week Committee and chair of the College of Education subcommittee, participated in Scholars Week both in person and online.

"It was great to see people, especially all the students, presenting and continuing the important process of research and dissemination," Oslund said. "Nothing prepares future scholars, and even professionals, better than presenting in person. Having interactions with other people in a time where many are isolated was helpful and highly valuable. Getting in-person feedback and engaging with others on campus brought back an element that has been missing for the past year or more."

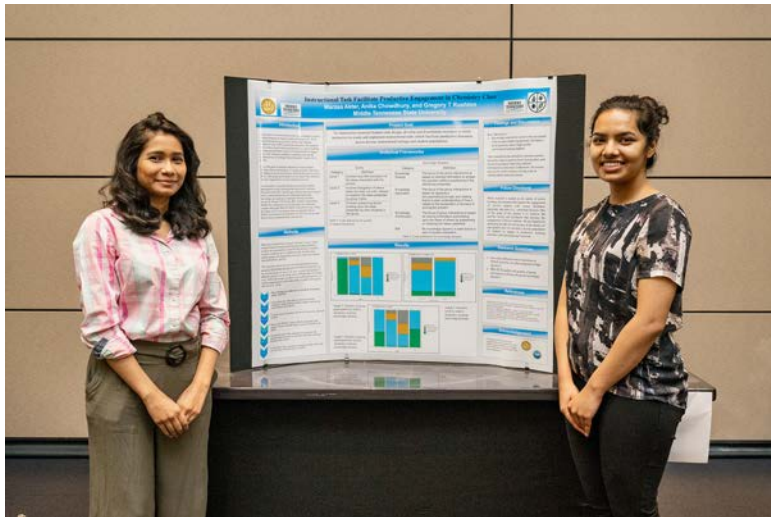
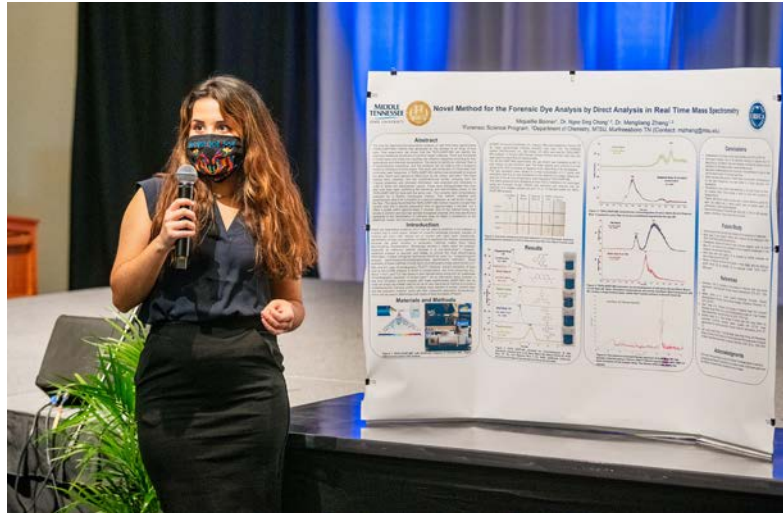
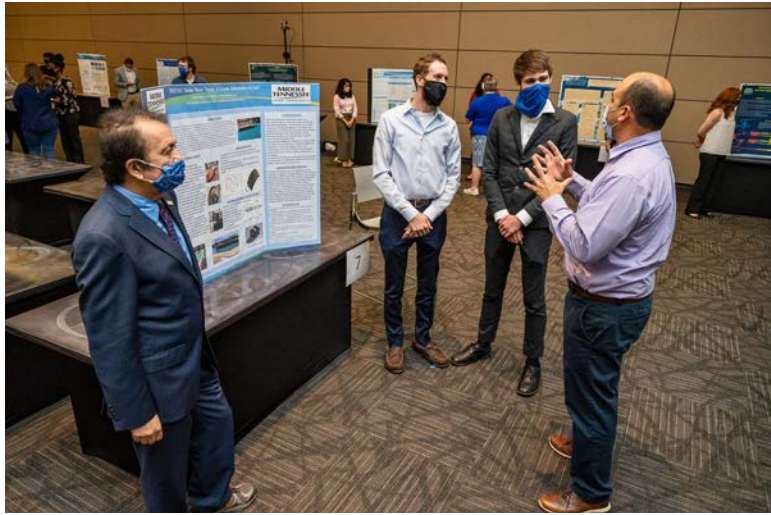
Hunsicker, a graduating senior, presented her research about the relationships between reading ability, educational experiences and psychological functioning.

"Scholars Week 2021 was one of the highlights of my senior year," she said. "I loved sharing my ideas and gaining insight from faculty and other students. Before the event, the only people that really knew about my project were my research lab members, so it was interesting to hear feedback from totally different perspectives. I heard from education students, chemistry students and even a sports management student, so it was exciting to form connections with people in other disciplines."

For more on this year's Scholars Week, check out this video from the university's Facebook page.

--Story by Stephanie Barrette, Specialist - Communications, MTSU News and Media Relations

PICTURES FROM SCHOLARS WEEK 2021

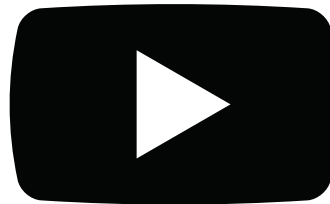




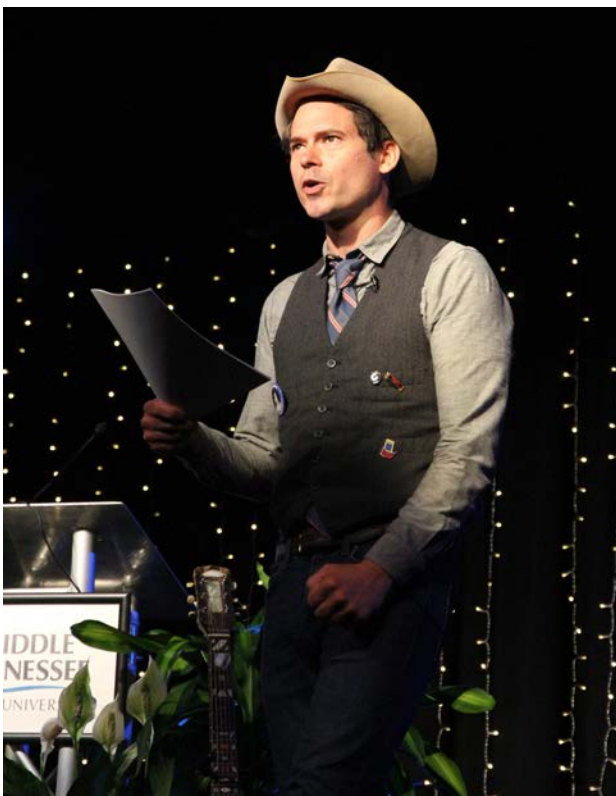
MISSED THE LECTURE?

**FEATURING
KETCH SECOR
OF OLD CROW MEDICINE SHOW
- DISTINGUISHED LECTURE -
UNDERGRADUATE RESEARCH WEEK**

WATCH NOW BY CLICKING THE PLAY BUTTON BELOW



THANKS TO ALL WHO JOINED US FOR KETCH SECOR'S LECTURE ON APRIL 20, 2021. THE UNDERGRADUATE RESEARCH CENTER IS GRATEFUL TO MTSU'S DISTINGUISHED LECTURE FUND AND THE STUDENT ORGANIZATION FOR THE ADVANCEMENT OF RESEARCH FOR SPONSORING THIS SPECIAL EVENT!





FEATURED SOAR STUDENT COLE BUFFALINI, SENIOR

Major: Forensic Science

Faculty Mentor(s): Dr. Hugh Berryman, Dr. Tiffany Saul

Current Research Focus: Ballistic Skeletal Trauma

Project Description: To be able to predict shooter to target distance is an extremely important factor in criminal investigations. My research attempts to determine the potential of gunshot primer residue as a predictor of shooter to target distance. Barium, antimony, and lead are not found normally in nature together. This combination is only found within gunshot primer residue. If we analyze the wound tracks from gunshot wounds on pig ribs, we can attempt to find these three elements in combination. With knowns of distance, bullet caliber, and others, we may be able to discover the capability to determine shooter to target distance via instrumental techniques, which could greatly benefit criminal investigations and prosecutions.

Why does this topic interest you?

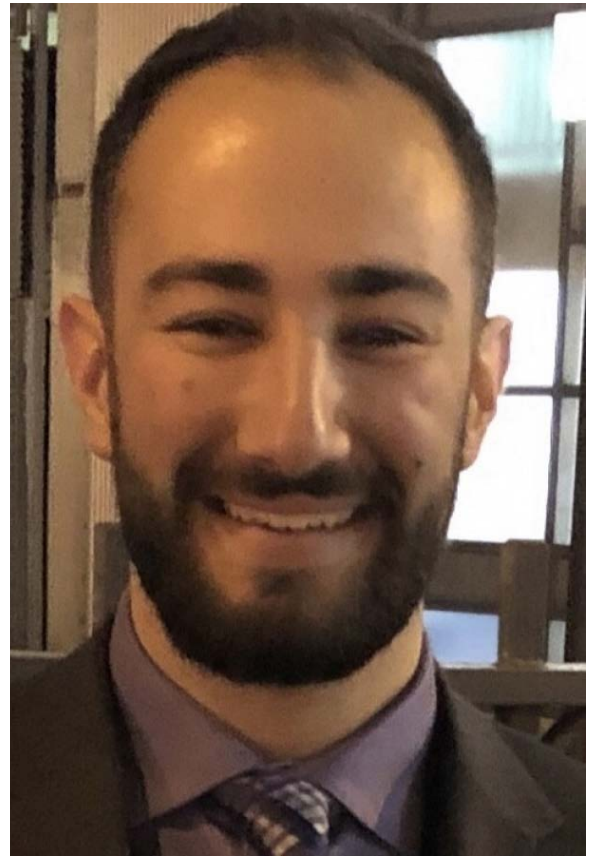
Growing up with a passion for firearms and anatomy and conducting research with Dr. Berryman was the perfect opportunity to bring together two of my favorite interests. I am able to learn about skeletal trauma, a topic that is not covered in MTSU curriculum, and in which is Dr. Berryman's specialty. The experience also provides me with a greater knowledge of ballistics and firearms.

What are your professional aspirations?

I plan to attend MTSU to pursue a Master of Criminal Justice beginning in the fall of 2021. Following this program, I hope to work as a field agent within law enforcement at the state or federal level.

Do you have any advice for future researchers?

The exciting part of research is that there is never a wrong answer. You try and come up with ideas no one else has before you, you test it, write up results, and share what you learned with others. If you have a passion for something, pursue it! You do not know the impact you could have on the world one day. Surprise yourself and enjoy the amazing process. With the programs offered at this institution, there is only a bright future for you!



Join us!

**WANT TO
LEARN
MORE
ABOUT
SOAR?**

**Check out our [website](#) and
[current SOAR student profiles!](#)**



FEATURED SOAR STUDENT JILLIAN SHERER, SENIOR

Major: Biology

Faculty Mentor: Dr. Scott Handy

Current Research Focus: Fluorescent Probes Based on the Aurone Scaffold

Project Description: Fluorescent labels can be used in many aspects of scientific research from bacterial identification to protein component determination. Aurones have extremely fluorescent properties and they are small, making them valuable in the observation of biological settings. I am working on a group project to develop a three part fluorescent probe that includes a reactive N-Hydroxysuccinimide ester along side of an aurone with a benzofuranone linker in between. The N-Hydroxysuccinimide has proved to bind specifically to amine groups and the activated aurone will make those groups fluoresce. With this label in hand, we can move towards the use of biochemical research to visualize distances between protein subunits through the use of Forster Resonance Energy Transfer (FRET).

Why does this topic interest you?

Proteins run the world. Nearly everything in the human body revolves around their formation and functions. There are already fluorescent labels on the market, but they prove to be expensive, large in size, and difficult to work with. In making this aurone based probe, we hope to make protein analysis more readily available for future research groups.

What are your professional aspirations?

I plan to attend medical school in the hopes of becoming a surgeon in the future. Medicine and science have always piqued my interest and continue to draw me in.



Do you have any advice for future researchers? Step outside of your comfort zone and do research in a field that you may not as be as familiar with. As a biology major, chemistry research helps provide me with a broader base of knowledge and understanding. Don't be afraid to ask questions! One of the points of research is to learn so ask away!

CONGRATS TO ALL OUR GRADUATING SENIORS

You will be missed!

INTERNSHIPS & RESEARCH OPPORTUNITIES

Check out the following opportunities for summer research !

- **REU in Advanced Secured Sensor Enabling Technologies, Florida International University | Deadline May 10, 2021**
- **Fall 2021 Community College Internships (CCI) Program, US Dept of Energy | Deadline May 27, 2021**
- **Fall 2021 Science Undergraduate Laboratory Internships (SULI) Program, US Dept of Energy | Deadline May 27, 2021**

Virtual UR Presentation & Paper Opps

- **Call for Abstracts, Virtual 2021 Annual Conference, The Wildlife Society | Deadline May 14, 2021**
- **Raymond J. Cunningham Prize, American Historical Assn (for the best article published in a journal written by an undergraduate student) | Deadline May 15, 2021**
- **Call for Papers, "Special Forum: Undergraduate Perspectives on Feminism"; Journal of Feminist Scholarship | Deadline May 15, 2021**
- **Call for Proposals, Information+ Conference 2021: Interdisciplinary Practices in Information Design & Visualization | Deadline May 15, 2021**
- **Call for Abstracts, Student Poster Contest, American Center for Life Cycle Assessment 2021 Conference | Deadline May 24, 2021**
- **Call for Papers, Afkar: The Undergraduate Journal of Middle East Studies | Deadline June 1, 2021**
- **Twenty-First Annual Steel Design Student Competition, Association of Collegiate Schools of Architecture | Deadline June 2, 2021**
- **Call for Papers, Mystērion: The Theology Journal of Boston College | Deadline June 15, 2021**
- **Essay Contest, Girl Security and International Security | Deadline July 16, 2021**
- **Call for Papers, Cura Terra: Georgetown's Undergraduate Journal of the Environment | Submissions accepted on a rolling basis**



STUDENTS! Are you presenting at a virtual conference this spring and would like assistance in paying for your registration fee? The URC can help!

The Undergraduate Research Center strives to support students in dissemination of their research. Undergraduates who are accepted to present their research at a regional, state, national, or international conference are eligible to receive financial assistance for registration fees.

Awarded travel funds are payable on a reimbursable basis only.

Please contact Wendi.Watts@mtsu.edu for more information.

UNDERGRADUATE RESEARCH GRADUATION DISTINCTION



LEVELS OF RECOGNITION

Distinction in Undergraduate Research

- Students receive a dark blue, light blue, and white cord

Scholar Distinction in Undergraduate Research

- Students receive a dark blue, light blue and white cord AND a medallion (see image to the right)



Congrats to our 2021 recipients!

Rachel Alexander, Distinction

Mark Blackmon, Distinction

Cole Buffalini, Distinction

Jewel Galloway, Scholar Distinction

Katelyn Gardner, Distinction

Amber Hayden, Distinction

Brendan Mitchell Fostyk, Scholar Distinction

Samuel Morgan, Scholar Distinction

Ella Morin, Scholar Distinction

Jiwoo Park, Scholar Distinction

Radina Porashka, Scholar Distinction

Zachary Sanchez, Scholar Distinction

Jillian Sherer, Scholar Distinction

Nathan Smith, Scholar Distinction

Janna Spada, Distinction

Amy Tran, Scholar Distinction

Anna Page Wolfe, Distinction

UNDERGRADUATE RESEARCH AND CREATIVE ACTIVITY (URECA) AWARDS SUMMER 2021

Assistant Awards

Emma Beard - *Literacy in Latin America*

Faculty Mentor: Katie Schrodt, Elementary and Special Education

Jessika Benson - The Effects of Diatomaceous Earth on pH and Digestibility in the Bovine Rumen

Faculty Mentor: Maegan Hollis, Agriculture

Rachel Booher - Kigo and American Poetry: An Analysis of the Japanese Influences on the Haiku of Gary Snyder, with Five Personal Interpretations of the Japanese Seasonal Elements

Faculty Mentor: Phillip Phillips, English

Charlotte Daigle - An Evaluation of Perspective, Persona, and Point of View In Short Stories

Faculty Mentor: Rhonda McDaniel, English

Gabrielle Harder - The effect of corn feed particle size on broiler chicken growth, development, and productivity

Faculty Mentor: Kevin Downs, Agriculture

Danny Harp - Commemorations on the Landscape: Seven African American Women Who Helped to Define R&B and Country Music

Faculty Mentor: Martha Norkunas, History

Callum Hay- Identifying Patterns in Budgetary Adjustments Taken by Southeastern States During the Covid19 Pandemic

Faculty Mentors: Daniel Smith, Economy

Shelby Howard - Does Religion Moderate the Association between Sex and Intimacy?

Faculty Mentor: Rebecca Oldham, Human Science

Hanna Kolwyck - Noise Exposure: How it Affects Hearing in Music Majors Versus Non-Music Majors

Faculty Mentor: Rebecca Fischer, Health and Human Performance

Kayla Moores - Gestation site selection in Northern Watersnakes (*Nerodia sipedon*)

Faculty Mentor: Amy Phelps, Biology

UNDERGRADUATE RESEARCH AND CREATIVE ACTIVITY (URECA) AWARDS SUMMER 2021

Assistant Awards (Cont.)

Emma Summers - *The Effects of a Pandemic on Speech Therapy for Children*
Faculty Mentor: Kathryn Blankenship, Health and Human Performance

Aurbrianna Taylor - *Visual Expressions of Sound Recordings: Creating Cover Art For and With Student Songwriters*
Faculty Mentor: Erin Anfinson, Art and Design

Merry Young - *The Relationship between Religion and Guilt after Sexual Encounters*
Faculty Mentors: Rebecca Oldham, Human Science

Sylvia Zakher - *Investigating English Language Learners Interactions and Engagements in a POGIL Based General Chemistry Class*

Silver Awards

Ashton Bazzell - *Environmental temperature effects on milk production and daily activity of dairy cattle with respect to different breeds*
Faculty Mentor: Jessica Carter, Agriculture

Sarah Garris - *Comparison of Media Components for Somatic Embryogenesis in Tissue Callus of Vitis aestivalis 'Norton/Cynthiana'*
Faculty Mentor: John DuBois, Biology

Grace O'Connell - *A Compilation of Audio Recordings for Solo Trumpet and Accompaniment*
Faculty Mentors: Michael Arndt, Music

Gold Awards

Jeffrey Mann - *Biofuel development from biomass modification and characterization via Raman Spectroscopy techniques*
Faculty Mentor: Ngee Chong, Chemistry

UNDERGRADUATE RESEARCH AND CREATIVE ACTIVITY AWARDS SPRING 2021

Platinum Awards

Maria Clark - Synthesis and Characterization of the Therapeutic Potential of β -5

Faculty Mentor: Kevin Bicker, Chemistry

Robert Conner - Effects of Different Alfalfa (*Medicago sativa* L.) and Tall Fescue (*Schedonorus arundinaceus* L.) Mixing Ratio on Dry Matter Yield, Nutritive Value and Greenhouse Gas Emission

Faculty Mentor: Song Cui, Agriculture

Hannah Hudson - The Effects of Intra-Cerebral Infusions of Oxytocin Agonist and Antagonist on Conditioned Place Preference

Faculty Mentor: Tiffany Rogers, Psychology

Sarah Kerr - A Controlled Analysis of Carbon and Nitrogen Isotopic Fractionation and Fatty Acid Turnover rates in Tetragnathid Spiders

Faculty Mentor: Ryan Otter, Biology

Jack Maxwell - Investigating the Significance of SWI/SNF on MYC-dependent Transcription in Malignant Rhabdoid Tumor

Faculty Mentor: Aril Weissmiller, Biology

Sophia Taylor - Synthetic Organic Electrochemistry in Deep Eutectic Solvents

Faculty Mentor: Scott Handy, Chemistry

Carina Vazquez - Creating Acoustic Diode in Waveguides: Simulation and Experiment

Faculty Mentor: William Robertson, Physiology

Meghan Wassom - Synthesis and evaluation of antifungal peptoid derivatives against *Cryptococcus neoformans*

Faculty Mentor: Kevin Bicker, Chemistry

Team Awards

Probing the N-MYC-WDR5 interaction in neuroblastoma

Team Members: Logan Carver, Ashi Patel

Faculty Mentor: April Weissmillier, Biology

Reentry Expectations of Life-Sentenced Women

Team Members: Miranda Pomatto, Alexander Taylor

Faculty Mentor: Meredith Dye, Sociology

Play Space: A New Play Development Initiative

Team Members: Oliver Callaghan, Anna Grace Gragg, Gavin Strawn, Cassidy Woodall

Faculty Mentor: Katie Goodwin and Jennifer Shouse, Theatre and Dance



QUESTIONS OR COMMENTS?

email: Jamie.Burriss@mtsu.edu

SCHOLARS WEEK 2021 WINNERS

UNIVERSITY-WIDE POSTER EXPOSITION

COLLEGE OF BASIC & APPLIED SCIENCES

UNDERGRADUATE 1ST PLACE

Exploring Undergraduate Biology Students' Attitudes and Science Communication about COVID19 and COVID19 Vaccines

Mariana De Araujo Bryan, Thippaphone Niravong, Laine Matthews
Mentor: Maryann Elizabeth Barnes, Biology

UNDERGRADUATE 2ND PLACE

Influence of varying kudzu leaf meal particle sizes added to a broiler diet
Emily Stafford

Mentor: Kevin Downs, Agriculture

UNDERGRADUATE 3RD PLACE

Synthesis of functionalized peptoids designed to coordinate to quantum dots for use in biomedical applications
Cameron Maddux

Mentor: Kevin Bicker, Chemistry

GRADUATE 1ST PLACE

Outside the Classroom: An Evaluation of Equine Internships
Kaylee Layton

Mentor: Holly Spooner, Equine Health

GRADUATE 2ND PLACE

An Advanced Convolutional Neural Network for Detecting Chest X-ray Abnormalities.
Fady Tawfik

Mentor: Xin Yang, Computer Science

GRADUATE 3RD PLACE

Toward Sustainable Municipal Solid Waste Management: Biogas Generation in Middle Tennessee Landfills.
Juan Garcia

Mentor: Mina Mohebbi, Engineering Technology

UNIVERSITY COLLEGE

GRADUATE 1ST PLACE

Will your TSA claim be approved? - A predictive modeling approach
Tingting Sun

Mentor: Lu Xiong, Mathematical Sciences

SCHOLARS WEEK 2021 WINNERS

UNIVERSITY-WIDE POSTER EXPOSITION

COLLEGE OF BEHAVIORAL & HEALTH SCIENCES

UNDERGRADUATE 1ST PLACE

Examining the Impact of Past Educational Experiences on Current Reading Ability and Psychological Functioning
Lauren Hunsicker
Mentor: Emily Farris, Dyslexia Services

UNDERGRADUATE 2ND PLACE

A Review of the Comorbidity of ADHD and Dyslexia
Esmeralda Ramirez
Mentors: Emily Farris, Dyslexia Services and Tim Odegard, Education

UNDERGRADUATE 3RD PLACE

Why They Died: An expanded analytical examination of details surrounding a sample of officer-involved shooting deaths in 2019 in the United States
Amanda Washington
Mentor: Ben Stickle, Criminal Justice Adm

GRADUATE 1ST PLACE

Gender Differences in Perceptions of Personal Growth After Dating Violence
Justice Cundiff, Myra Pennington
Mentor: Mary Ellen Fromuth, Psychology

GRADUATE 2ND PLACE

Perceptions of Physical Education Majors Response to Emergency Remote Teaching During COVID-19
Alex Adams
Mentor: Brandon Wallace, Sociology and Anthropology

GRADUATE 3RD PLACE

Development of the Sexual Abuse Assessment Tool [SAAT] for exercise professionals who interact with women survivors of sexual abuse
Rebecca Claypool
Mentor: Angie Bowman, Health and Human Performance

SCHOLARS WEEK 2021 WINNERS

UNIVERSITY-WIDE POSTER EXPOSITION

COLLEGE OF LIBERAL ARTS

UNDERGRADUATE 1ST PLACE

Perceptions of Race Among Members of the Egyptian Diaspora in the United States
Valarie Risk
Mentor: Meredith Dye, Sociology and Anthropology

UNDERGRADUATE 2ND PLACE

Group Rights According to Constitutional Law: An expansion on "Should There Be Group Rights?
According to the Supreme Court and the United States Constitution, Yes."
Miura Rempis
Mentor: John Maynor, Political Science Intl Relations

UNDERGRADUATE 2ND PLACE

Understanding leadership styles and the prevention and management of nursing burnout in the hospital setting
Kayleigh Payne
Mentor: Betsy Dalton, Communication Studies

COLLEGE OF MEDIA AND ENTERTAINMENT

GRADUATE 1ST PLACE

Simple Signal Processing: Designing a User-Experience-Oriented Digital Equalizer
Andrew Bainton
Mentor: John Merchant, Recording Industry

GRADUATE 2ND PLACE

Binaural Audio with End User Control: A Binaural, Virtual Reality Nature Walk for Oculus Quest 2 with User
Controllable Equalization
Dustin Painter
Mentor: John Merchant, Recording Industry

GRADUATE 3RD PLACE

Music and Emotion: A Concept Album Employing Emotion and Tragedy as Central Themes
Michael Ryan
Mentor: Bill Crabtree, Recording Industry



QUESTIONS OR COMMENTS?

email: Jamie.Burriss@mtsu.edu