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)
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 gleaning 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
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!
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!
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 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!
I N T E R N S H I P S & R E S E A R C H O P P O R T U N I T I E S
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
- **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.
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 Fostykd, 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
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
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
Platinum Awards

**Maria Clark** - Synthesis and Characterization of the Therapeutic Potential of $\beta$-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 Weissmiller, 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 Gagg, Gavin Strawn, Cassidy Woodall*  
*Faculty Mentor: Katie Goodwin and Jennifer Shouse, Theatre and Dance*
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 COVID-19 and COVID-19 Vaccines
Mariana De Araujo Bryan, Thipphaphone 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 BUSINESS

UNDERGRADUATE 1ST PLACE
Beauty During a Pandemic: The Impact of COVID-19 on the Cosmetic Industry
Katelyn Gardner
Mentor: Diane Edmondson, Marketing

UNDERGRADUATE 2ND PLACE
MTSU Daniels Center Video Project
Javier Hernandez
Mentor: Hilary Miller, Veterans & Military Family Center

GRADUATE 1ST PLACE
Differentiating Sales Education through the Addition of an International Element
Hannah Makarczyk
Mentor: Diane Edmondson, Marketing

GRADUATE 2ND PLACE
Impact of Electric Vehicle Adoption on Electricity Consumption and Generation: Evidence from California
Atia Ferdousee
Mentor: Michael Roach, Economics and Finance

COLLEGE OF EDUCATION

GRADUATE 1ST PLACE
The Effect of a Knowledge-Based Curriculum Using Science Read-Alouds on Vocabulary and Listening Comprehension Outcomes with Preschoolers
Nicole Crouch, Eric Oslund, Amy Elleman
Mentor: Dr. Eric Oslund, Elementary and Special Education

GRADUATE 2ND PLACE
Dyslexia Specific Font: A Promised Solution but is it Effective?
Pamela Shewalter
Mentor: Tim Odegard, Education

GRADUATE 3RD PLACE
Physical Education Teachers Technology Self-Efficacy and Integration
Alex Adams
Mentor: Donald Belcher, 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
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