MIDDLE TENNESSEE STATE UNIVERSITY
COLLEGE OF BASIC AND APPLIED SCIENCES

What's Happening in CBAS?

Spring 2021

AEROSPACE

Aerospace Associate Professor Inspires Students in "Pursuit of Wisdom"

Nate Callender somehow manages to juggle teaching, technology, research and family.

An MTSU associate professor in the Department of Aerospace, Callender tries to inspire his students in the "pursuit of wisdom" by pursuing it himself. He wants his students to discover the truth of the proverb "blessed is the one who finds wisdom, and the one who gets understanding."

Nate Callender

Callender, 43, a native of Halls, Tennessee, now living in Murfreesboro, teaches courses within and coordinates the aerospace technology concentration; supervises the aerospace technology laboratory; mentors undergraduate and graduate researchers (aerospace technology seniors, undergraduate research scholars, Honors and master's students).

A faculty member since 2005, Callender also chairs department and university committees; is a member of EXL (experiential learning), Honors College and graduate faculty; and associate chair of the Aerospace Department.

During a time of uncertainty from spring break through the fall semester because of the COVID-19 pandemic when many classes were held remotely, Callender remained a reliable, steady influence with his students.

"I try to exemplify calmness of temper and judgment inside and outside of the classroom," said Callender, who earned both his master's in aviation systems and doctorate in engineering science from the University of Tennessee Space Institute in Tullahoma, Tennessee.

With all courses since early March being delivered remotely, Callender has brought a strong mix of prerecorded and synchronous question-and-answer sessions, where students were engaged in learning events at the same time.

He was available to assist students — by texts, emails, phone calls and Zooms — at all hours to meet their schedules and "have rapid answers to questions, so their course progress won't be hampered," he said.

All along, he assisted greatly in ensuring the technology capabilities at the airport (the Aerospace Mobile Classroom and a separate classroom at the new Murfreesboro Municipal Airport terminal) continued to work, plus training other faculty on this equipment.

"Student enrollment in the Aerospace Department has increased significantly in the last four years and only continued to do so throughout the summer and fall," he said.

Callender taught four courses — fundamentals of aerodynamics, two sections of aircraft performance and problems in aerospace — to a combined 87 students remotely in the spring. He incorporates glider design competitions, flight testing and wind tunnel usage in his classes.

Nate Callender, PhD, Aerospace Faculty Profile at the Murfreesboro airport. (Photo: J. Intintoli)

This fall, nearly 130 students have been taking the same remote courses. His lecture videos and quizzes were "administered to allow students to move at their own pace and optional Zoom question-and-answer sessions have been held weekly," he said.

"The topics discussed in Zoom sessions include questions about lecture content, quiz help, homework help, test review help and test question clarification," he said. "Many students who have joined Zoom sessions have done so to simply listen to the questions that others have, much like in a conventional class."

Using a robot, Callender has recorded every lecture from every class he has taught for the last five years. For remote instruction in the COVID environment, lecture videos from recent semesters were chosen, arranged and provided to students. Quizzes were incorporated between certain lectures.

Callender has adapted various technologies to provide lectures to students who miss because of sickness, primarily COVID-19, and trained aerospace faculty members to learn how to use the equipment.

"Philosophically, conventional courses in general provide the best educational experience," he said. "However, remote courses present certain advantages. Students with good time management skills and motivation are able to work through material at a fast pace, leaving more time for Q&A and questions."

"The downside is for students who do not manage their time well and/or who are not motivated. They can easily fall behind. Teaching remotely seems to bring these issues to light," he added.

A researcher in propeller noise reduction and computational fluid dynamic work on rotating cylinders, Callender has received various scholarly awards.

— Randy Weiler (*Randy.Weiler@mtsu.edu*)

Please, Make Students Aware of this Opportunity

ORGANIZATION OF BLACK AEROSPACE PROFESSIONALS
Middle Tennessee State University Chapter

AEROSPACE

MTSU aerospace maintenance management seniors benefit from 'scholarship' training

MTSU Aerospace Department maintenance management program coordinator and professor **Joe Hawkins** and other faculty have mentored another outstanding group of students who will likely land excellent jobs in the industry.

In a year when the COVID-19 pandemic closed doors of opportunity for many, five of Hawkins' students proved their resolve by earning coveted **National Business Aviation Administration Charities scholarships**.

The scholarship program, supported by member donors, offers nearly $100,000 annually in cash awards as tuition reimbursement for enrolled students and nearly the same amount in monetary and training awards for working professionals in business aviation, including pilots, maintenance professionals, schedulers, dispatchers, flight attendants and flight technicians.

The MTSU student recipients include:

• **Aubrey Vest**, a rising senior, is from Enville, Tennessee, and scheduled to graduate May 2022. She received a scholarship to study several different Dassault Falcon Jet systems during a 14-day maintenance initial and avionics course at a CAE (Certified Association Executive) Inc. training center in Morristown, New Jersey.

• **Brandon Snell**, a senior graduating Saturday, May 8, is from Murfreesboro. He also received a scholarship to study several Dassault Falcon Jet initial maintenance systems during a 14-day course at a FlightSafety Training Center in Dallas, Texas.

• **Wagdy Hanna**, a senior graduating May 8, is from Nashville, Tennessee. His scholarship allowed him to study the Challenger 300 series maintenance initial course Nov. 30-Dec. 11, 2020, at the CAE Training Center in Dallas.

• **Tanner Jones**, a December 2020 graduate, is from Murfreesboro and has been a mechanic with the MTSU Flight School since 2019. His scholarship was from Textron Aviation, studying the Citation CJ3/CJ3+ Series maintenance initial training for 10 days.

• **Logan Knight**, a senior graduating May 8, is from Bartlett, Tennessee. His scholarship was with Williams International, studying the FJ Series engine line maintenance.

At the MTSU Flight Operations Center maintenance hangar at Murfreesboro Airport, National Business Aviation Administration Charities scholarship recipients, front row from left, Aubrey Vest, Logan Knight, Tanner Jones and Brandon Snell and back row, from left, Wagdy Hanna and Joe Hawkins stand with an airplane engine they have trained on as undergraduates. (MTSU photo by J. Intintoli)

Vest said the "amount of new technology I have come to learn is astounding. I've known for a while that computerized flight was the 'next big thing,' but learning the new-age fly-by-wire systems of the Falcon 7X has opened my eyes to the complexity of tomorrow's aviation industry.

"Almost everything is controlled by computers and wires on this aircraft, with few mechanical connections existing on the airframe. Going from aircraft completely made of cables and pulleys to a completely computerized aircraft has been tough, but I cannot wait to see what more I can learn about this type of technology."

A Cairo, Egypt, native, Hanna said he "was nervous at first for being the one with the least experience in the classroom, but the CAE instructors were helpful when it came to explaining the materials and answering all questions.

"I learned a lot about all different Challenger series systems and I had the opportunity to do an engine run and taxi in the simulator. Also, I was able to expand my network with my classmates and instructors who had a lot of knowledge in the aviation field."

Snell said going to FlightSafety "was a big eye-opener to the technology, how detailed and user-friendly maintenance manuals are and the instructors were unbelievable with how much they knew about the aircraft."

Reflecting on the trends for MTSU students, Hawkins said "every year, we are delighted our students are selected for a variety of these top-tier training programs. These awardees are reflective of the high-caliber students in the program, and their academic success in a very intense and comprehensive curriculum."

Joe Hawkins

AEROSPACE

Hawkins said corporate operators "do not trust the care and maintenance of their 70- to 80-million dollar jets to anyone but those who are specifically trained and experienced. … These corporate classes of aircraft are the driving force and development of emerging and future aircraft technologies. … Completing these training courses will lead to long-term careers in the corporate flight departments of many Fortune 500 companies and other individual operators."

- Randy Weiler, MTSU News & media

MTSU aerospace maintenance management seniors Brandon Snell, left, Aubrey Vest and Tanner Jones perform training tasks in the Flight Operations Center maintenance hangar at Murfreesboro Airport. They are among five MTSU students who received National Business Aviation Administration Charities scholarships to attend out-of-state training for up to two weeks during the 2020-21 academic year. (MTSU photo by J. Intintoli)

MTSU seniors Wagdy Hanna, left, and Logan Knight discuss topics related to a jet engine they are training on in the Flight Operations Center maintenance hangar at Murfreesboro Airport. They are among five MTSU students who received National Business Aviation Administration Charities scholarships to attend out-of-state training for up to two weeks during the 2020-21 academic year. (MTSU photo by J. Intintoli)

AEROSPACE

MTSU aerospace's new unmanned aircraft FAA partnership can enhance students' career preparation

The **Middle Tennessee State University Department of Aerospace's Unmanned Aircraft Systems Operations** program is navigating the first year of a new partnership with the **Federal Aviation Administration**.

Last fall, the FAA announced it had selected MTSU for the **UAS Collegiate Training Initiative** program.

The FAA's UAS Collegiate Training Initiative program recognizes institutions that prepare students for careers in unmanned aircraft systems, commonly referred to as drones. In order to qualify for the initiative, schools must offer a bachelor's or associate degree in UAS or a degree with a minor, concentration or certificate in UAS.

Schools must provide curriculum covering various aspects of UAS training, including hands-on flight practice, maintenance, uses, applications, privacy concerns, safety, and federal policies concerning UAS.

"We are honored to continue that partnership by being selected to participate in this FAA initiative," said **Kevin Corns**, assistant professor of aerospace and MTSU UAS Operations director.

"This partnership with the FAA reinforces our commitment in the UAS Operations program to provide leading-edge education and training opportunities to our students to ensure they have the necessary knowledge, skills and abilities to safely operate in the National Airspace System," Corns added.

MTSU **College of Basic and Applied Sciences** Dean **Bud Fischer** said the FAA's selecting MTSU to the FAA UAS Collegiate Training program "indicates they recognize the effectiveness of our program in preparing students for careers in the unmanned aircraft systems industry."

"Through this selection, the FAA is certifying MTSU has one of the outstanding UAS programs in the country and that our MTSU graduates are exceptional candidates for careers in the UAS field," Fischer added.

Corns said MTSU has had a long history of partnering with the FAA through the **Air Traffic Control Collegiate Training Initiative** to prepare aerospace students to work for the FAA as air traffic controllers.

Kevin Corns, MTSU UAS Operations director and assistant professor in the Department of Aerospace, holds the certificate sent by the FAA, acknowledging the Collegiate Training Initiative program that the aerospace department is now a part of since September. The program recognizes institutions that prepare students for careers in unmanned aircraft systems, commonly called drones. (MTSU photo by Mary Lou Cornett)

MTSU UAS Operations facts and figures*

• There are 71 students majoring in the Unmanned Aircraft Systems Operations concentration.

• Number of core classes: 10

• Number of faculty: 1.

• 34 students have graduated from the MTSU program.

• MTSU began teaching UAS as an elective in 2011.

• The **Tennessee Board of Regents** approved the program in 2015.

*Source: Kevin Corns

Nontraditional student discovers MTSU program

One of the many students who will benefit from the FAA-MTSU partnership is **Cat Bradley**, 30, of Murfreesboro, a fifth-year senior scheduled to graduate in May with UAS and Japanese language degrees.

"Students coming into the UAS program now have access to materials and technology that set us apart from other schools, and this is another notch in that belt," said Bradley, who has a 3.78 GPA. "The FAA UAS Collegiate Training Initiative program, for me, is another step toward proving how valuable a degree is from MTSU in Unmanned Aircraft Systems Operations."

"Our professional pilots are already well known for their skill in the industry thanks to MTSU's focus on safety and experience, and I am proud that we are beginning to receive the same recognition," she added.

"Anyone can walk into Best Buy, purchase a drone and be up and flying the same day. Because of this, there is a stigma surrounding UAS pilots, and a degree from MTSU carries more weight in the professional world as a result. The FAA UAS Collegiate Training Initiative program is proof to employers that our students are safe, trained and professional."

When she was younger, Bradley "loved taking apart and building computers and later smartphones, but I did not consider a STEM (science, technology, engineering and math) career until I started taking programming classes."

Bradley "found MTSU's UAS program through an online friend who was studying accounting at MTSU, and I knew that was the path I wanted to take," she said. "After researching the use of unmanned aircraft in disaster relief and agriculture, I immediately applied and moved from Texas to Tennessee that summer."

Corns came to MTSU in fall 2016, the same semester Bradley enrolled after transferring from Navarro College in Corsicana, Texas, where she was a music major "with no aviation experience," she said. He approached her to be a research assistant.

"I do a little of everything there, but my big projects generally focus on programming/modifying our software to suit our needs," she said.

"We have a lot of new technology coming in, so there's always something to work on between our 3D printers, new aircraft, new transmitters, new flight software and more."

Cat Bradley

"I am the go-to for setting up and fine-tuning our technology," Bradley added. "I also grade the discussion board posts for the intro to Unmanned Aircraft Systems course. Occasionally I will pick up a paid job for instructing or flying UAS. This semester, I will also be acting as a mentor to high school students with Sage College in Spain. They are working to build a drone that will measure environmental pollution in their area."

'MTSU experience could not have replicated anywhere else'

Meanwhile, Bradley inherited many Japanese language books from her grandfather, who was stationed in Japan during the Vietnam War. She began taking Japanese courses. Corns suggested she study abroad. In 2019, she left for Toyo University in Tokyo. She's made connections with other UAS pilots and educators in Japan, and hopes to return in the future.

Bradley's sung with the **MTSU Women's Chorus** and played the guzheng for the **Chinese Music Ensemble**.

"My time at MTSU has been an incredible experience that I could not have replicated anywhere else," Bradley said. Through the UAS program, she takes classes with the **photography**, **film**, **GIS** (geographic information systems), **electronic engineering** and **computer science** departments.

"In each of these departments, there have been motivated and empathetic professors who are passionate about the classes they teach and understand how their courses apply to us as students of the Aerospace Department," she said. "Most of these courses have at least one assignment that can be applied toward a portfolio that is valuable in multiple areas of aviation.

Bradley has "lots of options" after graduating, thanks to "how quickly the UAS industry is growing," she said. They include graduate school at MTSU or the University of Washington, and she's also been in contact with U.S. and Japanese aviation companies.

- Randy Weiler, News and Media Relations

At the MTSU Farm in Lascassas, Tenn., Kevin Corns, assistant professor in the Department of Aerospace and Unmanned Aircraft Systems Operations program director, flies a fixed-wing drone his students in an upper-division UAS class built. MTSU is in the first year of a collegiate initiative with the FAA, a program that recognizes universities that prepare students for careers in this field. (MTSU file photo by Andy Heidt)

In a photo taken at the MTSU Farm in Lascassas, Tenn., before the COVID-19 pandemic forced people to wear masks and social distance, Cat Bradley, foreground, and Unmanned Aircraft Systems Operations classmates fly drones. Since September 2020, MTSU has been a UAS collegiate partner with the FAA. (MTSU photo submitted by Kevin Corns)

AEROSPACE

New organization "TAPS" into every aspect of aerospace

Already off the ground, the newest **MTSU** student organization takes flight this week with its first in-person meeting.

The **Tennessee Aerospace Professionals Society**, which incorporated in February and already enjoying more than 30 members, gathers for the first time at 5:30 p.m. Thursday, March 4, in Business and Aerospace Building Room S126. New members are welcome.

The purpose of the Tennessee Aerospace Professionals Society, or TAPS, is to further the career development of students and professionals in all aerospace pathways through education, comradery and outreach.

To learn more about the organization, which is one of more than 370 on the MTSU campus, email club President **AtleyHederon** at agh4q@mtmail.mtsu.edu. Updates are available on Instagram @mtsutaps and their website under development.

Atley Henderson

"We started TAPS because we wanted to have an organization that would promote all careers within aviation and the aerospace industry," Henderson said. "Everything from pilots and dispatchers to air traffic controllers and even flight attendants — we wanted to make sure everyone had a place to call home."

"We also want to promote 21st century business skills that will ensure our members have an easier time pursuing a career after college," added Henderson. "Ultimately, we want to provide a place for all aviation pre-professionals, regardless of the job they hope to have, where they can network, learn valuable skills and build friendships to last a lifetime."

Organization Vice President **Ivy Adams** said it is "a brilliant opportunity to engage with other passionate young adults and connect with inspiring mentors."

Adams said the organization's motto is "Education, Camaraderie, Outreach."

"Through service learning and professional development, Tennessee Aerospace Professionals Society strives to unite, motivate and equip the membership with the leadership and citizenship skills necessary to pursue a career in aerospace," she said. "We prioritize personal development by exhibiting our (core) values."

Ivy Adams

Adams, who is from Sumner County, Tennessee, and pursuing an aviation management degree with minors in business administration and University Honors, said TAPS "represents the diverse population of the **Aerospace Department**. We encourage everyone to participate and contribute their unique perspective to the development of the organization."

In addition to Henderson and Adams, others on the Executive Council include Secretary **Brielle Walmsley** and **Treasurer Tarak Patel**. Associate professor **Andrea Georgiou** is faculty adviser.

—Randy Weiler (*Randy.Weiler@mtsu.edu*)

As sunset approaches, MTSU aerospace students and certified flight instructors Ryan Patterson, partially hidden left. Cole Ferraro and Copher Kashif perform their final checks and unloading after flying in two new Diamond Aircraft on Friday, June 19, from Michigan near the Canadian border. MTSU purchased six new planes and is having 13 planes refurbished. (MTSU file photo by J. Intintoli)

AGRICULTURE

MTSU creates "Virtual Farm" USDA funding to educate kids during pandemic

USDA United States Department of Agriculture

STEMsational Ag: The Virtual Farm
MIDDLE TENNESSEE STATE UNIVERSITY

Dr. Cynthia Chaffin | Dr. Tony Johnston | Dr. Keely O'brien | Dr. Chandra Story | Dr. Jill Thomas

If youngsters can't go to the farm during the COVID-19 pandemic, MTSU will help take the farm to the youngsters.

The university's **Center for Health and Human Services** has received an $816,000 grant from the **U.S. Department of Agriculture** to support the proposed **"STEMsational Ag: The Virtual Farm" project**.

The grant comes from USDA's Rapid Response to Novel Coronavirus (SARS-COV-2) and is appropriate for traditional school settings, both in-person and distance instruction, as well as for homeschooling. Students will learn about agriculture and topics related to STEM, an acronym for the disciplines of science, technology, engineering and mathematics.

In partnership with the **School of Agriculture**'s **Fermentation Science Program**, the center will administer the project as a way to provide both formal and informal educational content for K-14 students throughout an 11-state region.

"We are excited to serve as the lead for an 11-state area which will take advantage of this program," said **Cynthia Chafin**, CCHS associate director of community programs.

"STEMsational Ag: The Virtual Farm" includes modules and audio-visual resources that are tailored to each grade level and projects and assignments tailored to specific age groups. It empowers both formal and informal educators in their interactions with students, and it includes delivery options regardless of access to technology.

"I, along with my colleagues **Tony Johnston** and **Keely O'Brien** of the School of Agriculture, are e xcited to engage in a project which will help educators, parents and students during this historically challenging time," Chafin said.

MTSU is one of eight grant recipients announced in November by USDA's National Institute of Food and Agriculture as part of an investment of more than $10.5 million to support educators nationwide.

Jill Thomas, who served as project coordinator on various CHHS projects from 2007 to 2013, will be project coordinator for "STEMsational Ag: The Virtual Farm."

Chandra Story, an associate professor in the **Department of Health and Human Performance**, is the project evaluator.

Information concerning the grant can be found on the USDA website at https://tinyurl.com/5y2zarmj. Information about the Center for Health and Human Services, go to www.mtsu.edu/chhs or contact Chafin at *cynthia.chafin@mtsu.edu.*

This work is supported by the Agriculture and Food Research Initiative, Education and Workforce Development Program [grant no. 2021-67037-33380/project accession no. 1024880], from the U.S. Department of Agriculture, National Institute of Food and Agriculture.

Any opinions, findings, conclusions or recommendations expressed are those of the author(s) and should not be construed to represent any official USDA or U.S. Government determination or policy.

— Gina K. Logue (*gina.logue@mtsu.edu*)

CHHS Center for Health and Human Services

MT Fermentation Science

AGRICULTURE

MTSU fermentation science major receives inaugural scholarship from brewer Terrapin

MTSU rising junior fermentation science major **Calvin Hood** of Greeneville, Tennessee, is the inaugural recipient of the **Tenth and Blake Brewing Education Scholarship**, awarded by Athens, Georgia-based Terrapin Beer Co.

The announcement was made Wednesday, May 12, by Terrapin President **Dustin Watts**; **Paul Verdu**, vice president and head of Tenth & Blake, the craft and import division of Molson Coors Beverage Co.; and **Tony Johnston**, director of the MTSU fermentation science program.

The Tenth and Blake Brewing Education Scholarship Fund supports underrepresented undergraduate students seeking an MTSU fermentation science degree. The $7,000 award for Hood also provides an opportunity to intern with Terrapin during the summer between the student's junior and senior year of college.

Watts, Verdu, Johnston and Terrapin human resources director Jeremiah Shepherd surprised Hood, informing him April 30 in a virtual video session he was chosen the first recipient. Hood, 20, grew up on a 26-acre vineyard in Greene and Cocke counties in East Tennessee. His family eventually started their own business, Goodwater Vineyards and Winery.

"Oh, my gosh. This scholarship means everything," said Hood, a 2019 Greeneville High School graduate who has worked at the family vineyard since he was 9 and works part-time at Bean's Creek Winery in Manchester, Tennessee. "This will make it so much easier on my family. It moved me to tears. It was an amazing day."

Rising MTSU junior fermentation science major Calvin Hood is the first recipient of the Tenth and Blake Brewing Education Scholarship, awarded by Terrapin Beer Co. The Tenth and Blake Brewing Education Scholarship Fund supports underrepresented undergraduate students seeking an MTSU fermentation science degree. (Submitted photo by Maggie Sanders)

Rising MTSU junior fermentation science major Calvin Hood, lower left, of Greeneville, Tenn., listens as Terrapin Beer Co. President Dustin Watts, right, announces during a virtual meeting that Hood is the first recipient of the Tenth and Blake Brewing Education Scholarship, awarded by Terrapin. Also shown are Terrapin human resources director Jeremiah Shepherd, top left, Tenth and Blake Vice President Paul Verdu and Dr. Tony Johnston, director of the MTSU fermentation science program. The Tenth and Blake Brewing Education Scholarship Fund supports underrepresented undergraduate students seeking an MTSU fermentation science degree. (Screen shot provided by MTSU)

Johnston said the scholarship "is going to provide a fantastic opportunity for MTSU students who might not have grown up thinking about fermentation as a career. … They (Terrapin) are looking to Calvin for leadership and have him help recruit minority students."

The award from Terrapin would be $10,000 for a freshman receiving the scholarship, Johnston said.

Watts calls it "an exciting moment for us at Terrapin and the brewing industry as a whole. We couldn't be more thrilled to have Calvin as our first scholarship recipient and think he will be a great alum and ambassador for our brewing education scholarship."

Molson Coors Beverage Co., which acquired Terrapin in 2016, established a $25,000 endowment with MTSU and similar partnerships with Colorado State and Oregon State University. Terrapin, Molson Coors and MTSU made the original scholarship announcement in September 2020.

To learn more about the scholarship or to donate, visit www.terrapinbeer.com/scholarship.

About MTSU Fermentation Science

MTSU's fermentation science undergraduate degree is the first of its kind in Tennessee and one of only two in the Southeast. Fermentation science courses are predominantly hands-on, and all are focused on preparing students for careers in industry or further education through graduate programs. Faculty members have industry experience and work closely with students in ongoing research. Because Tennessee is a member of the Southern Regional Academic Common Market, prospective students from other member states not offering a fermentation science degree at one of their state universities qualify for in-state tuition. MTSU's graduate program with a fermentation science emphasis falls within the Master of Science in Professional Science degree. This MBA-based program prepares individuals, with and without backgrounds in fermentation, for careers in industries that utilize fer-

BREWING EDUCATION SCHOLARSHIP FUND

TERRAPIN BEER CO. ATHENS, GA

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mentation to create end products and services. MTSU students frequently have job offers in hand before graduation.

About Terrapin Beer Co.

Terrapin Beer Co. began as a passion for beer between founders Brian "Spike" Buckowski and John Cochran. The two brewed and released their first beer in 2002, a Rye Pale Ale that went on to win a gold medal at the 2002 Great American Beer Festival. Inspired by the creative culture of Athens, Georgia., the brewery's home, Terrapin works to create unique experiences through its craft beers and is distributed in 22 states. In 2019, Terrapin launched Terraprint, which focuses on environmental sustainability and community outreach. For more information about Terrapin's year-round and seasonal lineups or Terraprint, visit www.terrapinbeer.com.

—Randy Weiler (*Randy.Weiler@mtsu.edu*)

AGRICULTURE

MTSU students carry a glimpse of agriculture to local schools

The schoolchildren couldn't visit the MTSU Farm, so the farm came to the schools.

Numerous **MTSU School of Agriculture** students prepared special ag bags for more than 1,100 **Rutherford County** fourth graders and nearly 75 teachers.

This year's **Spring into Agriculture** theme — "Planting the Seeds for Future Needs" — helped educate children and their families about the importance of agriculture.

In a partnership with **Rutherford County Farm Bureau**, the bags contained agriculture-related items, including crayons and coloring books, 4-H Club and wildflower seed packets, farm to fridge books, Beef Council, cow and Tennessee Electric pencils, something from Lucky Ladd Farms in Eagleville, Tennessee, and more.

The agritourism class and other agriculture students were joined by instructor **Alanna Vaught** and graduate teaching assistant **Emily Gill** in making deliveries recently to **Eagleville**, **Thurman Francis**, **David Youree**, **Walter Hill**, **Buchanan**, **Blackman**, **Rock Springs**, **Homer Pittard Campus School**, **Wilson**, **Kittrell**, **Brown's Chapel** and **McFadden School of Excellence**.

For the second year, the issues related to coronavirus and COVID-19 and the need for students and teachers to be in a safe environment prevented an in-person visit to the **MTSU Farm and Dairy** in Lascassas, Tennessee.

Lorilei Richardson and **James Jackson** in teacher **Joan Merryman's** science class at McFadden received an early peek of what the bags contained.

"We can enjoy these things," said Richardson, 9, whose teacher's interest in agriculture has begun to inspire the youngster "to do something with animals — be a veterinarian or science teacher" — once she starts her own career. Richardson is familiar with the popular Batey Farms in the Blackman community.

In acknowledging the items "will be something that everybody can play with," Jackson, 10, "has done a lot of gardening" along with picking strawberries and blueberries at area farms." His grandmother, **Sarah Jessie**, retired as Rutherford County Schools' science coordinator.

Merryman said her students opened their bags April 6.

"We're just grateful for all the goodies," she said. "They get excited about planting the school garden" every year that includes cedar glades, cotton, okra, tomatoes, cucumber, zucchini, cantaloupes and pumpkins

MTSU junior **Emma De Las Sallas** of Los Angeles, California, an elementary education major and agriculture minor, said the process "has been super important to give children a piece of agriculture to every child." She and agribusiness alumnus **Chris Brown** delivered 75 bags to Thurman Francis in Smyrna, Tennessee.

Gill said a seed germination project is one of the biggest items in the students' bag.

"They'll be able to watch how a seed germinates and grows," she said. "They'll be able to see the restructure as it grows and make scientific observations in the classroom."

Gill added the agritourism class, other students and Farm Bureau "got to pull a lot of resources together, to bring a little bit of agriculture into the classroom during these times."

- Randy Weiler, MTSU News & Media

McFadden School of Excellence fourth grader James Jackson, left, and science teacher Joan Merryman assist MTSU graduate teaching assistant Emily Gill and School of Agriculture instructor Alanna Vaught in bringing in 75 special agriculture-related bags to help McFadden students learn about life on a farm. More than 1,100 Rutherford County students and 75 teachers received bags thanks to MTSU students and partner Rutherford County Farm Bureau. (MTSU photo by J. Intintoli)

Francine Whitworth, left, with Farm Bureau's Women's Leadership Committee, and MTSU School of Agriculture instructor Alanna Vaught place green bags with agriculture-related items for some of the 12 Rutherford County elementary schools on the list for deliveries of the bags recently. More than 1,100 fourth graders and 75 teachers received the goodies provided by Rutherford County Farm Bureau, agritourism class and other agriculture students, helping educate the children about life on the farm. (MTSU photo by J. Intintoli)

AGRICULTURE

MTSU equestrian team 'driven' to successful fall season

The **Middle Tennessee State University equestrian team** was driven to success at two regional Intercollegiate Horse Shows Association events this fall. In each competition, which were about a month apart, the riding Raiders drove to great lengths to pull off both feats. There were two- and three-day, round trip drives to Maryville, Tennessee, and Murray, Kentucky, because overnight stays were prohibited under the university's COVID-19 health protocols.

Both were part of the fall schedule that happened despite the COVID-19 pandemic, as officials for the University of Tennessee- and Murray State University-hosted events followed university, state and Centers for Disease Control and Prevention protocols to ensure safety was the top priority.

MIDDLE TENNESSEE STATE UNIVERSITY
School of Agriculture

MTSU equestrian team riders collected 18 blue ribbons and other awards at the IHSA competition at Murray State University in Kentucky during the fall season. (Submitted photo)

"I am particularly proud of the dedication of our students this semester," said **Ariel Herrin Higgins**, director of equestrian programs and coach. "Because of the COVID-19 guidelines in place, all of these competitions meant driving back to Murfreesboro at the end of a long day each time. The team spent about six hours driving each day, and they still managed to stay focused and prepared."

MTSU was the only team traveling daily. Herrin Higgins referenced some interesting numbers related to the extra effort. The team took 16 riders in eight cars, two coaches and six horses altogether to Maryville. They carried 22 students, 12 cars, two coaches and hauled six horses to Murray, and brought home 18 blue ribbons.

The equestrian program is part of the horse science program in the MTSU School of Agriculture, which is part of the College of Basic and Applied Sciences.

MTSU junior Taylor Meek of Murfreesboro enjoyed High Point Rider and second-place finishes during the IHSA competition at Murray State University this fall. (Submitted photo)

Murray State competition highlights

MTSU won the High Point Team all three days of competition. The riding Raiders had the High Point Rider for Days 1 and 2 with junior **Taylor Meek** of Murfreesboro; Reserve High Point Rider (runner-up) Day 1 with freshman **Carolyn Trouten** of Cleveland, Tennessee; Reserve High Point Rider Day 2 with junior **Rachel Petree** of Maynardville, Tennessee; and Reserve High Point Rider (Meek) on the final day.

Herrin Higgins said the team "kept our undefeated streak going this semester after our two wins at the University of Tennessee-Knoxville. We had a few new members show for the first time, and everyone had great debuts with the equestrian team. '

UT-Knoxville competition highlights

MTSU earned High Point Team honors each day. Petree rode to Reserve High Point Rider on Day 1 and High Point Rider on the final day, and **Lindsay Gilleland** of Powder Springs, Georgia, earned Reserve High Point Rider on Day 2.

"It was our first attempt at the back-and-forth travel," Herrin Higgins said. "It was a long and exhausting weekend, but we managed to still compete well, despite the trying circumstances."

After competing and arriving in Murfreesboro about 9 p.m. that Saturday, they gathered three extra horses from the pasture they offered to bring the next day because of the show's size, repacked the trailer and left at 4:30 a.m. Sunday with only a few hours' sleep.

What's Happening in CBAS?

Herrin Higgins praised UT-Knoxville and Murray State event organizers for keeping things safe, plus providing overnight care for the MTSU horses.

"We are fortunate to get to compete in a great region, where we all cheer each other on, making it easier to have people from other schools staying close by be able to check on the horses, especially after we had left for the evening," she said.

MTSU hosts Hunter Seat, Western shows in February

The team is preparing to host two IHSA events in February 2021 in **Tennessee Miller Coliseum**, with strict COVID-19 protocols in place as needed. The first will be the **Feb. 13-14 MTSU IHSA Hunter Seat Show**, followed by the **Feb. 19-21 MTSU IHSA Western Show**. More details to come, but Herrin Higgins said both likely will not be open to spectators.

- Randy Weiler MTSU News and Media

Ariel Higgins, director of equestrian programs and coach

MTSU freshman Carolyn Trouten of Cleveland, Tenn., rode to a second-place finish during the IHSA competition at Murray State University this fall. (Submitted photo)

MTSU sophomore equestrian team member Allyssa Kraker of Dallas, Ga., and her horse, Eddie, have been a part of an outstanding fall season at IHSA competitions at Murray State University and the University of Tennessee-Knoxville this fall. (Submitted photo)

2021 textbook published

Evans, J. W., R. M. Hoffman, J. L. Petersen, and L. D. Van Vleck. 2021. The Horse (3rd Ed.). Waveland Press, Long Grove, IL. ISBN 13: 978-1-4786-3947-3

MTSU White & Chocolate Milk is now available at these locations:

- PHILLIPS BOOKSTORE (STUDENT UNION BUILDING)
- ARAMARK PODS
- DWIGHT'S MINI-MART (KUC 200)
- PHARMACY (REC CENTER)
- HATTIE JANE'S CREAMERY (ON THE SQUARE)
- CITY CAFE RESTAURANT (113 E MAIN ST)
- RUTHERFORD FARMERS COOP (985 MIDDLE TN BLVD)
- WOODBURY FARMERS COOP (400 McMINNVILLE HWY, WOODBURY)
- LASCASSAS FEED STORE (7684 BARLOW LANE, LASCASSAS)
- TWO FAT MEN CATERING (1331 W MAIN, LEBANON)

MTSU CREAMERY

AGRICULTURE

MTSU Raiders ride home with top individual honors at stock horse nationals

They were the new kids in the saddle, but coach **Andrea Rego** and the determined riders of the 2021 **MTSU** stock horse team rode into the Sweetwater, Texas, outdoor coliseum ready to defend their American Stock Horse Association National Show Division 2 championship with a well-executed plan of preparation and mental skills training.

"We had a whole new team, so we had expectations to compete and represent MTSU as best as we could and get them (riders) to have correct and clean runs (in the various categories)," Rego said.

MTSU, the 2019 champion, finished fourth overall — behind champion North Central Texas College, runner-up Missouri State University and third-place University of Arkansas — and collected five individual national and reserve (runner-up) awards at the end of the two-day outdoor competition held April 16-17 in the Nolan County Coliseum. MTSU also earned the 2016 championship.

Student riders and their horses competed in cow horse, reining and trail events. In cow horse, the rider is tasked to work a live cow, performing specific maneuvers requiring skill, coordination and timing.

"The team focused a lot on mental skills training and incorporating confidence and accuracy in the practice pen, so that it reflected in their performances," said Rego, who learned recently she has been named the MTSU **Student Organizations Adviser of the Year**.

"I noticed more precise and assertive showing from our preparations," she added. "I'm very pleased with the team members' support of one another. I think the obstacles they've been through over the last year have set them up to appreciate every opportunity they can get to show and make it count."

MTSU 2021 ASHA National Show participants Rachel Petree, left, Lindsay Gilleland, Louann Braunwalder, Taylor Meek, JoBeth Scarlett and Jordan Dillenbeck pose with the individual awards they received during the competition held April 16-17 in the Nolan County Coliseum in Sweetwater, Texas. The Blue Raiders finished fourth overall after winning the 2019 Division 2 event. (Submitted photo by High Cotton Promotions)

The 2020 event was canceled because of COVID-19. This year, the ASHA followed current Texas, Nolan County and coliseum safety protocols for outdoor events, the association's **Stacy Jo Hartley** said.

MTSU team members include:

- ***Lindsay Gilleland**, a senior horse science major from Powder Springs, Georgia.*
- ***Taylor Meek**, a junior horse science major from Murfreesboro, Tennessee.*
- ***JoBeth Scarlett**, a sophomore animal science major from New Market, Tennessee.*
- ***Jordan Dillenbeck**, a junior horse science major from Murfreesboro.*
- ***Rachel Petree**, a junior horse science major from Maynardville, Tennessee.*
- ***Louann Braunwalder**, a freshman fermentation science major from Lascassas, Tennessee.*

Andrea Rego

Individual honors

Meek was awarded the **Sumrall Sportsmanship Award** by national show officials and coaches, who chose a rider who exemplified the character of the late **Brian Sumrall**, an influential stock horse clinician, judge and ASHA executive committee member since its inception.

Riding Dunnits Smokin, Meek earned reserve champion, Collegiate Trail Champion and third overall Collegiate rider in the National Champion, Limited Non-Pro division.

Scarlett rode Dontjacwithmyspook to the National Novice Trail, Reining and Cow Horse Class championship in the National Champion, Novice division.

Braunwalder, riding Twentyeventwister, earned the National Youth Pleasure & Reining Championship in the National Champion, Youth 14-18 division.

- Randy Weiler, MTSU News & Media

What's Happening in CBAS?

At this year's ASHA National Show, MTSU's Taylor Meek was awarded the Sumrall Sportsmanship Award by event officials April 16-17 in Sweetwater, Texas. Riding Dunnits Smokin, the junior horse science major from Murfreesboro, Tenn., also was reserve champion, Collegiate Trail Champion and third overall Collegiate rider in the National Champion, Limited Non-Pro division. (Submitted photo by Caitlin Russell)

Riding Dontjacwithmyspook Lindsay Gilleland, a senior horse science major from Powder Springs, Ga., earned ASHA National Non-Pro Trail & Pleasure Champion, Collegiate Limited Reserve Champion Cow horse and sixth all-round Collegiate Limited Non-Pro honors. The competition was held April 16-17 in the Nolan County Coliseum in Sweetwater, Texas. (Submitted photo by High Cotton Promotions)

Riding BC Pennys From Tari, Jordan Dillenbeck, a junior horse science major from Murfreesboro, Tenn., finished as National Novice Pleasure Champion and National Novice Reserve Champion Cow Horse in the National Reserve Champion, Novice division at the 2021 ASHA National Show April 16-17 in the Nolan County Coliseum in Sweetwater, Texas. (Submitted photo by High Cotton Promotions)

Rachel Petree, a junior horse science major from Maynardville, Tenn., rode Hay Now Sunshine to third place in Novice Cow, fifth place in ASHA Nation Novice Trail and sixth in Nation Collegiate Novice Pleasure + Trail — ranking fourth overall in Nation, Novice, April 16-17 in the Nolan County Coliseum in Sweetwater, Texas. (Submitted photo by Andrea Rego)

Louann Braunwalder, a freshman fermentation science major from Lascassas, Tenn., rode Twentyeventwister to the ASHA National Youth Pleasure & Reining Championship in the National Champion, Youth 14-18 division April 16-17 in the Nolan County Coliseum in Sweetwater, Texas.

BIOLOGY

MTSU snake, lizard researcher, Ortega earns coveted Goldwater Scholarship

MTSU student **Denise Ortega** likes snakes. Actually, she *loves* snakes and lizards, contrary to most people having at least some degree of fear of them. As a young scientist, she appreciates and studies their existence.

An organismal biology and ecology major, Ortega has earned the prestigious **Barry M. Goldwater Scholarship**. The 22-year-old senior from Madison, Tennessee, is one of more than 400 U.S. college students from more than thousands of applicants to receive the distinction.

Denise Ortega is shown while conducting lizard research at a Costa Rica river in 2019 while on a National Science Foundation research trip. (Submitted photo by Janelle Talavera)

Denise Ortega holds a lizard she was studying in 2019 while on a National Science Foundation research trip to New Mexico. (Submitted photo by Vera Ting)

The scholarship is named after the late former U.S. senator from Arizona, who served in Congress for 30 years and had a strong interest in science and technology. It is among the highest awards undergraduates majoring in science can receive.

"The Goldwater award serves as a firm reminder to me that I really am a scientist and that all my efforts to succeed academically have been worth it," said Ortega, a bilingual, first-generation student originally from Ecuador who has completed two National Science Foundation research experiences for undergraduates, or REUs, at the University of New Mexico and Costa Rica.

"This scholarship pushes me to want more out of my research and it is a testament to all my hard work and the great people I have surrounded myself with," she added. "The Goldwater has given me the opportunity to share my experience in STEM with others. I hope to encourage other minorities in the field to apply to Goldwater and similar scholarships that they, too, can obtain."

Ortega said the Goldwater selection committee recognized her "dedication to strive in education, although the odds were stacked against me. I don't have a traditional research background. I had no experience or knowledge about the field of science, but I sought out opportunities that could help me become experienced in my field of study."

Planning to graduate in December, Ortega said she will use the Goldwater award of up to $7,500 to pay tuition, possible travel and research supplies.

"I am starting on a new lab project this fall, so I am very excited that I may be able to use these funds to buy supplies or cover expenses such as travel to research conferences that I may otherwise not be able to afford," she said. "Goldwater gives me the opportunity to focus fully on my education and worry about finances less."

Mentor Lindsey Swierk, a faculty member at Binghamton University in New York, and Denise Ortega studied the behavior of a water anole lizard endemic to Costa Rica for three months in 2019. Ortega is among more than 400 U.S. students to receive a prestigious Goldwater Scholarship for up to $7,500. (Submitted photo)

Helping others discover, enjoy her passion

Ortega has always loved nature. "My family was not surprised at all that I'd chosen something like this as my career. … they just didn't expect reptiles and amphibians," she said. "Like most people, they used to dislike snakes and weren't too keen on lizards.

"I'm mostly proud that I have been able to educate them on their importance, so now they have a more positive view on them and are often coming to me for reptile questions. Both my family and friends are always so interested in my work and it's so exciting that I get to share that with them and others."

Ortega said MTSU "has shaped the person I am today. When I started in 2017, I was 18 and had no idea what I wanted to do in biology. Now, I have a solid idea of who I am: A scientist and woman in STEM," the acronym for the fields of science, technology, engineering and technology.

MTSU faculty who are passionate about biology, mentors along the way and friends she has met through the trips to New Mexico and Costa Rica "have allowed me to become very open-minded to different cultures and beliefs. … MTSU created so many research opportunities for me that I will always cherish because of what I learned and the friendships I created," she said.

Laura Clippard

'An extraordinary student with a giving spirit'

Laura Clippard with the MTSU **Honors College** has assisted and advised 700 to 800 students applying for national awards (Goldwater, Fulbright and others) through the college's Undergraduate Fellowships Office.

"The Goldwater Scholarship is widely considered to be the most prestigious award bestowed on undergraduates studying the sciences and engineering," Clippard said. "The program was designed to encourage outstanding students to pursue careers in mathematics, the natural sciences and engineering."

Clippard said Ortega "is an extraordinary student who mentors others and has a giving spirit. She recently published a first-authored natural history note in Herpetological Review that documents female water anoles performing an unusual social signaling behavior that is usually only seen in males of this species."

—Randy Weiler (*Randy.Weiler@mtsu.edu*)

BIOLOGY

MTSU biology researcher caps senior year with 'extremely positive' Smithsonian internship experience

MTSU senior Sarah Clark of Murfreesboro found herself in once-in-a lifetime situation for 10 weeks earlier this year — selected by the Smithsonian Institution in Washington, D.C., for a virtual internship at the National Museum of Natural History.

A horse lover and biology researcher, Clark, 38, studied the evolution of equine influenza and the relationship of equine and avian influenza lineages before 1950.

Clark, a wife, mother of a son and who earned her biology (minor in science with a chemistry emphasis) degree Saturday, May 8, found herself working with National Museum of Natural History experts Sabrina Sholts and Audrey Lin, who preferred an in-person internship, but understood the COVID-19 reasons it had to be virtual.

Add a dash of serendipity: MTSU alumna and Murfreesboro native Andrea Eller — a childhood and close friend of Clark — is a Smithsonian zoologist and previous Peter Buck Postdoctoral Fellow who recommended Clark for the internship.

"The internship was an extremely positive experience," Clark said. "Although I did not locate possible tissue samples in the U.S., which was my primary goal, I learned an incredible amount about what a project like this entails."

MTSU senior biology major Sarah Clark of Murfreesboro, who will graduate Saturday, May 8, in Murphy Center, recently completed a 10-week virtual internship with the Smithsonian Institution and National Museum of Natural History, studying equine influenza. Clark left college to work and start a family, but returned with a keen interest in pursuing research, particularly equine science. (Submitted photo by Christopher Clark)

Valuable team member

Clark's background, work ethic and enthusiasm made her a valuable asset to Sholts, curator of biological anthropology in the National Museum of Natural History and Clark's mentor, and Lin, who is a Peter Buck Postdoctoral Fellow leading the equine influenza research project.

MTSU senior Sarah Clark of Murfreesboro, shown with Skyler, has always loved horses. The biology major, who graduated Saturday, May 8, in Murphy Center, recently finished a 10-week virtual internship with the Smithsonian and National Museum of Natural History, studying equine influenza. The wife and mother has a 3.6 GPA and will be in MTSU biology's master's degree program this fall as a graduate teaching assistant, working with assistant professor Jessica Arbour in darter anatomy research. (Submitted photo by Larry Pinkerton)

"Sarah has been a great help to us and is definitely a team member," Sholts and Lin said in an email about Clark. "We gave her the huge challenge of searching for historic tissue samples for genomic analyses, and she made contacts with experts and institutions all over the country in order to assess what might be available."

Sholts and Lin said they brought Clark into the project "specifically because of her connections to the horse community, since no one else on the project had this expertise. We value Sarah's input very much. She will go very far in her chosen profession in the future."

Clark said working with Sholts and Lin "was such a confidence-building experience. They were both supportive and encouraging about my ideas and the work I was doing. It was great to be a part of an incredible group of Smithsonian researchers.

"This was the first research I have been involved with that is focused on my species of interest, and I commented to Sabrina and Audrey, on more than one occasion, that I was having too much fun to call what I was doing 'work.' They both assured me that that is exactly how research should be. I could tell that they both are passionate about their work and love what they do."

Clark has volunteered to continue the Smithsonian research.

What's next for the researcher?

After being in the workforce, the experience of returning to school as an older student with a family "has been wonderful, overall," said Clark. "MTSU has always felt like home to me. … So many people in the Biology Department have been encouraging and kind to me, which kept me motivated."

Clark, who had a 3.6 GPA and is a Pinnacle Honor Society member, has been accepted into MTSU biology's master's degree program this fall as a graduate teaching assistant, working with assistant professor Jessica Arbour in darter anatomy research.

- Randy Weiler, News & Media

Dr. Sabrina Sholts **Audrey Lin** **Dr. Andrea Eller**

BIOLOGY

MTSU lifelong learner adapts to teaching biology, research technology changes amid pandemic

Becky Seipelt-Thiemann spends some of her downtime away from her work at MTSU learning to play the cello. Daughter Laurel plays the stringed instrument at Central Magnet School, and they have split a private lesson time weekly for three years.

"I like learning new things and it's a pretty instrument, too," Seipelt-Thiemann, an MTSU biology professor now in her 21st year, said of the lessons, which moved from in-person to virtual like her classes in March 2020 because of the COVID-19 pandemic.

Learning new things is what has driven Seipelt-Thiemann, who lives in Smyrna, Tennessee, for as long as she can remember. At an early age, she gravitated toward STEM (science, technology, engineering and math), particularly biology.

The Ripley, Ohio, native pursued biology at Berea College in Kentucky, graduating cum laude. Her "learning new things" interests spread to medical microbiology and immunology, earning her doctorate from the University of Kentucky. Then came new postdoctoral studies in hematology for a year at the University of Cincinnati and biological study of the genetics of yeast for two years at UK.

Seipelt-Thiemann joined the MTSU College of Basic and Applied Sciences biology faculty in fall 2000, with her quest for learning and research intact and new passion for teaching college-age students. Teaching recognitions and awards, many involving technology, soon came her way. In recent years, her expertise has helped lead to research grants totaling more than $501,000 with the National Science Foundation and National Institutes of Health.

Rebecca Seipelt-Thiemann teaching her Honors Genetics class in the Science Building.

A pandemic's impact

Seipelt-Thiemann and the rest of the MTSU faculty and students saw the spring 2020 semester interrupted by coronavirus as spring break arrived. In-person learning ceased; remote learning began. Impacted were her human genetics class, undergraduate research and genetics lab — about 230 students, including one Honors student defending her thesis and four other conducting thesis research.

It affected students' stress levels and hers as well.

"It has been very stressful," she said. "I felt like I was a brand new teacher again. There are things I've learned that I'll continue to use, but it has been rough. … It was rough on students. I was trying to pay attention to their stress levels. I had to remove and reorganize some things during the semester, which I really hate to do."

And it carried into the fall semester, where she taught 12 hours of classes, more than 100 students, three Honors students defending and a fourth researching their thesis; and she also was a genetics lab coordinator for 270 students that involved "a ton of work," she said.

Rebecca Seipelt-Thiemann teaching her Honors Genetics class in the Science Building.

"I've learned so many new (technology) things," said Seipelt-Thiemann, mentioning Zoom breakout rooms, Desmos, electronic grading, online course organization, scanning to PDF using her phone and more (with learning curves). She "adapted to other things I already do, making more professional recordings and 'off-the-cuff' recordings for collaborative work."

For the fall semester, she said she "spent much of the summer trying to plan and organize classes along the online organization. There was so much available it was truly overwhelming. I had to step back and really look at what I thought would be useful with how I already teach (mostly flipped classroom)."

Seipelt-Thiemann's flipped classroom is where students watch short videos she has created before coming to class. She "sells" it by asking them "to watch and learn basics at home by yourself, then we work together in class on the harder concepts and problems so that I and your peers can be there to help you if you get stuck."

Seipelt-Thiemann said her students "adapted fairly well, but some didn't at all. Just like me, they were learning all these new things, but have different classes and teachers that probably used different methods." Many students remained both in her in-person and virtual classes. She incorporated video notes into the mix and less formal walk-through videos for some activities and protocols.

"I had graded daily activities that students worked on both individually and in a team of three to four," she said. "I spoke with every student team every day of class just to check on them. They could still work with their team in class (in person) or in a Zoom breakout room. The personal connection to both their team and to me helped them stay motivated."

With communication being a two-way street, Seipelt-Thiemann found students' "tons of email in addition to (an online) discussion board … so overwhelming." She added communication was "the most time-consuming part for a course where I'm lab coordinator for 11 sections of 24 students." Students in other faculty members' classes vented their frustrations and expected immediate responses.

A brighter 2021

By the spring 2021 semester, most of her students had adjusted to the COVID-driven situation in her bioinformatics and human genetics classes and what she observed as coordinator for the nearly 220-student genetics lab.

"Most of my students are upper classmen. In the fall, most were sophomores," she said. "They have had the experiences (from previous semesters) and are getting used to how it's working."

Seipelt-Thiemann has adapted "to using the tools (technology) and I don't have to think about how to do things now. It's much smoother now. Students get a lot from being in-person. It will be nice when we are all able to get back together again."

As for the cello lessons, it's a diversion from work she will continue to look forward to, virtually — or eventually — in-person.

—Randy Weiler (*Randy.Weiler@mtsu.edu*)

MTSU Grad Honored By ACS

Fellow members of the Nashville Section, ACS Executive Committee;

It is with pleasure that I announce that we have now scheduled the Nashville Section, ACS Vitural Awards Program for Thursday, April 29, 2021. The program will be held on ZOOM from 6:30-8:00pm. Dr. Steven Townsend of Vanderbilt University has agreed to be our speaker. ***Ms Lena Clark*** *of Franklin County High School and a MTSU graduate will accept the 2020 award for Excellence in High School Teaching. If you have additional Section members that should be honored at this time, please let me know. You will soon receive the ZOOM link. Feel free to invite other Section members, your friends and colleagues.*

Thanks
Robert

Robert C. Wingfield Jr., Ph. D.
2021 Chair, Nashville Section, ACS
Associate Professor
Discipline of Chemistry
Fisk University
1000 – 17th Avenue North

Grant from Rally Foundation

Dr. April Weissmiller, biology, received a grant from Rally Foundation for understanding and inhibiting MYC function in rhabdoid tumors.

Professor of chemistry, shares the 2020 Woman of Achievement Award

Judith Iriarte-Gross dedicates her academic life to promoting women in science. She is director of MTSU's **Women in STEM (WISTEM) Center**, an incubator for women interested in science, technology, engineering and mathematics and the only one of its kind in Tennessee. She also initiated MTSU's **Expanding Your Horizons** conference, an annual event for middle-school and high-school girls who are interested in science.

Upon receiving her award, Iriarte-Gross referred to Abigail Adams' 1776 letter to the Continental Congress to "remember the ladies" in the creation of the nation to be called the United States.

"Today, I am a professor of chemistry because a mentor told me that I could succeed as a chemist," Iriarte-Gross said. "Therefore, I give back so that girls and women can achieve their goals in STEM. I am honored to receive the 2020 Woman of Achievement Award. Thank you for 'remembering the ladies.'"

MTSU chemistry professor Judith Iriarte-Gross, recipient of the 2020 Woman of Achievement Award from the Women in Higher Education in Tennessee, holds the award inside her office in the Science Building. (MTSU photo by Andy Heidt)

A fellow of the American Association for the Advancement of Science, the American Chemical Society and the Association for Women in Science, Iriarte-Gross is the recipient of numerous honors. Some of these include the 2010 TRIO Achievers Award from the Council for Opportunity in Education and the 2014 Athena International Leadership Award from Rutherford CABLE.

— Gina K. Logue (*gina.logue@mtsu.edu*)

CHEMISTRY

MTSU faculty member in his element teaching chemistry

David Friedman

MTSU faculty member David Friedman is in his element when teaching students chemistry. The California native first came to campus during the 2016 spring semester to instruct one class after conducting research for more than a decade at Vanderbilt University in the field of protein chemistry and proteomics — the analysis of the entire protein complement of a cell, tissue or organism. Also, he has a background in biochemistry, genetics and biological sciences.

Stepping behind the lectern again proved to be the catalyst that would thrust him back into the academic laboratory.

"Ultimately, I really did want to get back into teaching. I had done some in graduate school, but the nature of my professional job severely limited it," said Friedman. "I was looking forward to being in the classroom, devoting my energies to planning the semester and giving a whole body of knowledge to students."

Friedman teaches general chemistry for both majors and non-majors and also coordinates the two-semester lecture series as well as the first semester introductory courses' co-requisite lab sections for the department.

Critical thinking skills for life

One of the key reasons the dedicated educator wanted to return to the classroom was to teach young adults critical thinking skills, particularly in the scientific field.

"I'm aware for the non-major students my class will probably be the last science class they take," said Friedman. "It is important I teach all my students how to fundamentally recognize and understand what science is. Only recently has science been called into question in certain arenas. Regardless if students choose a professional career in science or not, they will be faced with making decisions about scientific issues that could affect them for the rest of their lives."

Before the coronavirus arrived, he had never taught outside of the traditional classroom, but quickly responded by meshing his lecture style with Zoom technology to provide his students a virtual experience as close as possible to in-person learning. All of his spring classes met remotely. Friedman's fall classes were divided with students alternately attending on campus and joining remotely in order to adhere to social distancing guidelines.

'Engaged, interacting' students

Utilizing his iPad, Friedman annotated his remarks digitally on slides, of which the students had a copy, while talking in a manner similar to former days when teachers utilized overhead projectors in the classroom. Since it was essentially the same way his classes had been taught in-person, the chemistry lecturer thinks his students seemed to transition well and reviews were positive.

"I certainly didn't invent it. It is old-school lecturing, but it works," he said.

Friedman's lectures were transmitted live to students who were watching remotely and able to ask questions. He required his students to attend during the scheduled class time, although the lectures were recorded and could be watched later.

"I wanted to make sure my students were on the same page, engaged and could interact with me live," he said. "And, later in the spring, it was important they were getting the same learning experience if they were in class or watching remotely."

He shakes his head at the memory of an early adventure when his class was "Zoom bombed" — a disruptive intrusion during the video meeting.

"It seems like eons ago," said Friedman. "I told the class to sign out and emailed them a new code. We were back up in about five minutes."

Initially, trying to prepare virtual materials for the accompanying labs was challenging. During summer 2020, the MTSU chemistry teachers agreed to go to a hybrid schedule of rotating the days when one-half of the students met in lab and the other half conducted virtual experiments, and then they swapped.

"I really wanted to keep myself and my students as safe as possible, but there just is no virtual lab in existence that takes the place of doing it yourself, mixing it, seeing the gas bubble up and doing chemistry," said Friedman.

Also, he utilizes D2L, or Desire2Learn, MTSU's online learning platform, for his tests and likes the statistical data the site provides.

'Motivating them to do their best'

Friedman says chemistry can be a difficult class and he keeps a positive attitude and is a class cheerleader. He also developed a video to help his students learn analytical study skills.

"I hope they see their professor is positive, passionate about teaching and cares about their success, and it will motivate them to do their best," he said. "I run a pretty tight ship, but occasionally I'll drop in a 'lame dad joke' just to add a little levity."

He says he is proud to teach at MTSU.

"There are a lot of first-generation college students on campus that are rising to meet the challenge everyday," said Friedman. "Some of them are working multiple jobs to attend and are living from paycheck-to- paycheck. They work hard. They want an education. It is inspiring."

– Patsy Weiler (*Patsy.Weiler@mtsu.edu)*

COMPUTER SCIENCE

MTSU HackMT winners crank out creativity despite competing virtually

Reverting to a virtual environment may have affected the number of participants, but it did not deter the talent and creativity of the college students taking part in the sixth annual **MTSU Computer Science Department's HackMT**.

Jacob Cuomo and Emily Nguyen were teammates on the first-place team that created an app to help family members keep track of chores, and as a bonus, they were each chosen to receive $2,500 scholarships provided by primary sponsor L3Harris to help wrap up the event, held virtually Friday through Sunday, Jan. 29-31.

The hackathon brings software developers, visual designers, programmers and computer science and computer information systems students from universities together to collaborate while inventing new web platforms, games, mobile apps and electronic gadgets.

This year, because of MTSU, state and Centers for Disease Control and Prevention protocols, they participated online from dorm rooms or home study areas.

Team No. 20 received the Hacker's Choice Award, selected by participants and visitors during the 36-hour HackMT event. In addition to their self-produced graphic, members Marie McCord, left, Alex Silavong, Gage Richardson, Biz Duff and Erica Truxton also had a creative entry — "Are You Kitten Me: a Purr-ference Quiz". (Submitted graphic by Alex Silavong)

Cuomo and Nguyen's Team 2 emerged the overall winner with The Fam App for mobile devices. Team members included MTSU's **Nathan Igot, William Lucas**, **Adam Rhodes**, **Austin Fine**, **Daniel Wiseman and Joshua Cox**, and **Anuj Choudhary** of Sheridan College in Ontario, Canada.

"We thought we would get third place," said Cuomo, 21, a junior computer science major from Franklin, Tennessee, who is minoring in math and data science. "We worked really hard. Normally, we stop and play games at other hackathons, but we stayed up the entire time. It went smoothly."

One team member's computer crashed, though his data was saved "and there was a lot of cohesion and a feeling of community (despite COVID-19)," Cuomo said. "Virtually, it was easy to be distracted."

Nguyen, 22, of Jackson, Tennessee, a junior computer science major, math and business administration minor and transfer from Jackson State Community College, attended church and was heading to Nashville, Tennessee, for a church-related family event when she heard the team had won.

"I cried in my car," Nguyen said. "I couldn't believe it. Everyone was nervous. We wanted to be first place. All of us came with different skills. We were dedicated. We kept in touch. I'm really grateful I picked this team. They are really talented … and funny and energetic. I learned a lot from them."

Winning the scholarship also was a surprise for Nguyen, who admitted to being "so grateful" for earning it from L3Harris. "It will be a big source of motivation, and keep up my passion for STEM (science, technology, engineering and math)." She might use the money to buy books L3Harris mentors recommended or pay for additional Coursera courses she has begun taking to help her expand her knowledge.

Cuomo said he, too, was "thankful" he was selected and will use the scholarship funds for tuition or to pay student loans. He added that attending one of L3Harris's fireside chats during the event may have helped. "They may have seen my leadership and organizing (skills), and everything came together nicely," he added.

Todd Harris, human resources manager with L3Harris, said HackMT "is a great event from our point of view because it allows the students to take their classroom learning and put it into practice in developing an actual product or project. Congratulations to all you students who participated over the last 36 hours and getting the experience. … Use this as a learning experience to put it together for your resume, talking to employers and putting it into practice in your classrooms."

Other sponsors included **Asurion**, **Bondware Web Solutions**, **CAT Financial**, **Doppler**, **Technology Advice** and **UBS**.

Other winners/Hacker's Choice Award

• Team No. 1, which created "FurnitureNet," earned second place. The team included MTSU's **James Scruggs**, **Sam Hollingsworth**, **Cody Maness**, **Girgis Shihataa**, **Alex Belina** and **Emily Bridgers**, and **Robert Smith** with SERVPRO.

• Team No. 20 took third place and captured the **Hacker's Choice Award** with its "You Kitten Me: A Purr-ference Quiz." Team members included MTSU students **Marie McCord**, **Gage Richardson**, **Biz Duff**, **Erica Truxton** and **Alex Silavong**.

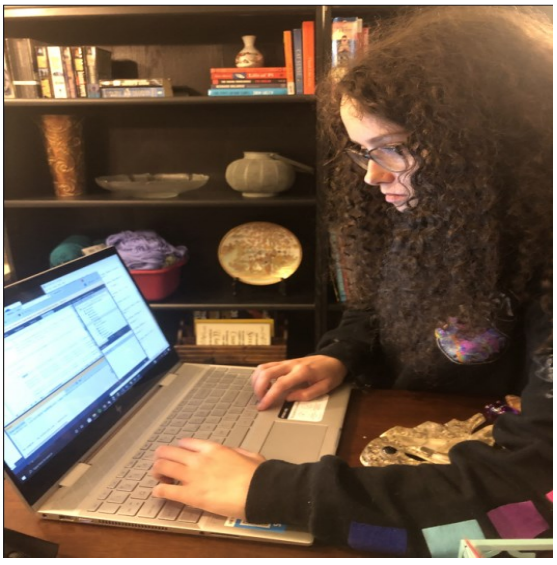
-

-Randy Weiler
MTSU News and Media

Hack MT *continued*

HackMT participant Jacob Cuomo, a junior from Franklin, Tenn., takes a break from his team's project Saturday, Jan. 30, from his study area in the family home. The team created an app called "Fam," where users can keep track of performing chores around the house, and earned first-place honors following the 36-hour virtual hackathon held Jan. 29-31. Cuomo also received a $2,500 scholarship from L3Harris. (MTSU photo submitted by Jacob Cuomo)

2021 MTSU Hack MT participant Emily Nguyen of Jackson, Tenn., helped Team No. 2 earn first-place honors in the 36-hour hackathon event,. She is a junior computer science major and transfer from Jackson State Community College. Event sponsor L3Harris awarded her a $2,500 scholarship. (MTSU photo submitted by Emily Nguyen)



MTSU junior Erica Truxton, 20, of Nashville, Tenn., works with teammates collaborating on the "Are You Kitten Me: A Purr-ference Quiz" project during the 36-hour MTSU Computer Science Department HackMT, held virtually Friday through Sunday, Jan. 29-31. The team placed third overall and received the Hacker's Choice Award. She is a double major in computer science and math. (MTSU photo submitted by Erica Truxton)

With a sleepy feline friend and team mascot Adora keeping him company, MTSU HackMT participant Gage Richardson, 19, a sophomore computer science major from Lewisburg Tenn., awaits the resumption of the competition. His team earned third-place honors and received the coveted Hacker's Choice Award for the project "Are You Kitten Me: A Purr-ference Quiz". After programming for 20 straight hours and as a joke, Richardson created the humorous "HELP ME!" message on his laptop. (MTSU photo submitted by Gage Richardson)

COMPUTER SCIENCE

Computer science professor closes out career, ensures student success during pandemic

Chrisila Pettey, professor of computer science and former chair of the Computer Science Department, produced new materials and gave students options for class attendance to ensure they succeeded in the wake of the pandemic.

"I have a lot of students who were worried about coming in," Pettey explained. "I gave them the (alternate) option of coming in online, so I have people on-ground and online at the same time."

She continued, "I told all my students, 'I will have class on-ground. You always have a seat, and I will be in the classroom, but I will have a Zoom session going at the same time. I will share my computer screen both in the class and in Zoom at the same time. Everybody who is coming in online sees what everybody in the classroom sees.'"

Pettey organized an on-ground space in the Kirksey Old Main building that adhered to safety guidelines.

"I have a seating chart where there is appropriate social distancing, and every student has a place in the classroom should they choose to come," she said.

Since she was unable to see all her students on Zoom while simultaneously broadcasting her computer screen, students joining online had to get used to speaking up.

"We just laid ground rules," Pettey said. "They just interrupt if they have a question, and the class can hear them because it's coming across the speakers, and that's what we do."

Concerned about the students consuming Zoom lessons while in distraction-laden home environments, Pettey created extra materials to support their learning.

"I felt like they needed to be able to have detailed lecture notes," she said. "When somebody is at home and the internet suddenly goes out or the dogs start barking…. Things happen at home that they don't necessarily have any control over. I want them to watch the video that I'm going to do, but I also wanted extra."

In addition, she overcame the challenge of producing complicated quizzes and tests and uploading them to the university's online learning platform D2L.

"I have to do all of the tests by hand," Pettey explained. "I create these questions with their answers by hand and then screenshot them…. The last test took me 10 hours to create. That has never been the case in an on-ground (class), not even when I was brand new (as a professor) with a brand new prep."

Pettey earned her undergraduate degree in math education from Lipscomb in 1978 and worked as a high school math teacher after graduation.

"I was born in Florida, raised in Colorado, but I've lived in Tennessee most of my life," Pettey said.

She later left education in the midst of pursuing her master's degree in math at MTSU. It was during this time that she first became interested in computer science.

"When I was doing my master's, computer science was actually part of the math department at that time," she said. "Because it was part of the math department, you could take some of the computer science courses as part of your math degree…. I found it very interesting."

After graduating from MTSU, she took a job teaching math at her alma mater and sat in on computer science classes on the side. It solidified her interest in the subject.

"I realized, 'You know what? This is going to take off,'" she said. "'There's going to be a computer science department (at MTSU), and they're going to need faculty members, and I don't have enough background, so I need to go back to school.'"

She attended Vanderbilt University for her doctorate in computer science and graduated in 1990. She returned to MTSU as a computer science professor in fall 1992.

Pettey closes out her career as a full professor with eight years spent as the department chair. She also spearheaded the department's "hackathon" titled HackMT that began in January 2016 and attracts tech-savvy students from MTSU and institutions throughout the region.

— Stephanie Barrette (*Stephanie.Barrette@mtsu.edu*)

CONCRETE & CONSTRUCTION TECH.

New Building for MTSU's School of Concrete and Construction

Middle Tennessee State University officials broke ground Tuesday, April 6, on a much-needed 54,000-square-foot, $40.1 million **School of Concrete and Construction Management** building.

With special guests, industry partners and alumni on hand in person and many others watching virtually on True Blue TV, the long-awaited ceremony was held outdoors near the corner of Blue Raider and Alumni drives in the southeast part of campus.

Expected to be completed in 15 months in time for Fall 2022 classes, the facility features classrooms, faculty and staff offices and laboratory space for **Concrete Industry Management** — one of the most exclusive programs in the nation — and **Construction Management**, both of which provide interns and ready-to-work graduates awaiting potentially lucrative careers.

"We mark yet another milestone in the university's strategic path to educate and prepare students to fulfill workplace demands," MTSU President **Sidney A. McPhee** told attendees. "Our undergraduate and graduate programs in Concrete and Construction Management position this institution as the go-to educational resource for students seeking to become leaders in these fields."

"Our programs have become the model other colleges and universities seek to replicate, and we've earned a reputation among industry leaders for preparing students with the knowledge and necessary skills to step into jobs ready to work Day One," he added.

McPhee was joined by Board of Trustees Chairman Steve Smith and board member **Pete DeLay**, **Provost Mark Byrnes**, first-year School of Concrete and Construction Management Director **Kelly Strong** and **Heather Brown**, professor, former director and event emcee, and a number of special guests in participating in the ceremonial shoveling of dirt at the end of the ceremony.

The Concrete and Construction Building will be located adjacent to the future **Applied Engineering Building**, a 90,000-square-foot, $54.9 million facility which has received state funding and an anticipated 2024 completion. Both will be in an area formerly occupied by Abernathy and Ezell halls, which have been demolished.

Combined, there are 325 majors and 1,500 graduates in both programs.

Brown said 30 Concrete Industry Management Patrons, who represent "our local, grassroots advisory group that give immense amounts of time, talent and treasure," provided funding for the building.

Smith complimented Brown and her colleagues for envisioning and fundraising for the building.

"With the disruptive effects of the pandemic, the timeline for this building could have easily been delayed or the entire project derailed," Smith said. "But thanks to the focus and resolve of this incredible team, that didn't happen. You had a clear vision for what our students and faculty need to be best in class in this field."

Junior Michael Urban of Nolensville, Tennessee, a Commercial Construction Management major, said "it's great the programs are getting their own building. It's going to be used well. … I'm excited to see the process and how it will come out — the tearing down of old buildings and the building of a new one."

A U.S. Navy veteran in his third semester, Urban, 27, said he will intern at the site this summer with Hoar Construction, "shadowing the site superintendent and getting a good foundation for a full-time position."

McPhee thanked industry partners for their support and mentioned 60 concrete alumni "have made generous contributions to date."

"I encourage alumni, who have not yet given, to donate," he added. "We want to add your name to our digital wall that will display an ongoing and updated list of donors. When you contribute to this project, you empower our students and join us in our commitment to building the future."

DeLay, a Nashville, Tennessee, businessman, who met Brown in 2007 and has followed the progress for four decades since the first two students entered the concrete program, said the "goal of the university is to transform the lives of our students.

"This type of collaboration allowed this program to develop and has clearly accomplished so much for so many. It is something that sets MTSU apart and I believe it is an example of the great things that can happen when people are willing to collaborate with one another."

Brown said "this day is a culmination of 25 years of support from donors, alumni and employers who believe in our mission of educating the next concrete and construction workforce."

A recent national award recipient, Brown said designer Orcutt Winslow and their consultant and engineers; contractor, Hoar Construction and our hardworking campus planning staff — **Jamie Brewer** and **Bill Waits** — "took our dream and put it to the test to build an iconic concrete building that will also showcase masonry, steel and wood to capture all the building materials possible for our students to see for the

future."

Members of the **CIM National Steering Committee** and **CIM Patrons**, **Cemex**, **Irving Materials**, **Master Builders Solutions**, **Lehigh Hanson** and the **Southeast Cement Promotion Council** were just a few of the companies and organizations recognized for standing behind the program.

MTSU professor and event emcee Heather Brown shares about the long-awaited groundbreaking event for the School of Concrete and Construction Management Building, which took place Tuesday, April 6, on the southeast side of campus. The 54,000-square-foot, $40.1 million facility expects to be completed by Fall 2022. (MTSU photo by J. Intintoli)

MTSU President Sidney A. McPhee praises the numerous CIM (Concrete Industry Management) Patrons for their financial support and urges alumni and others to back the School of Concrete and Construction Management Building. A groundbreaking ceremony for the 54,000-square-foot, $40.1 million facility was held Tuesday, April 6, on the southeast side of campus. The expected completion time is fall 2022. (MTSU photo by J. Intintoli)

MTSU officials celebrated the groundbreaking ceremony for the 54,000-square-foot, $40.1 million School of Concrete and Construction Management Building on the southeast side of campus Tuesday, April 6. Ceremonial shoveling of dirt participants included, from left, Pete DeLay, trustee; Tom Boyd, trustee; J.B. Baker, trustee; Mary Martin, faculty trustee; Heather Brown, professor of concrete industry management; MTSU President Sidney A. McPhee; Stephen Smith, Board of Trustees chairman; Darrell Freeman, trustee vice chairman; Kelly Strong, director, MTSU School of Concrete and Construction Management; Daniel Bugbee, CIM (Concrete Industry Management) Patrons president; Pam Wright, trustee; Delanie McDonald, student trustee; and Christine Karbowiak Vanek, trustee. (MTSU photo by J. Intintoli)

CCM

Please, Make Students Aware of this Opportunity

NOW FORMING: **MTSU chapter of the National Society of Black Engineers (NSBE)**

NSBE NATIONAL SOCIETY OF BLACK ENGINEERS

Membership open to any student pursuing a degree in a STEM field.
Contact Professor Kelly Strong (kelly.strong@mtsu.edu)
...Become a charter member! Great leadership opportunities available!
Spread the word. Learn more about NSBE → nsbe.org

Middle Tennessee State University (MTSU)
MTSU School of Concrete and Construction Management
MTSU Biology Club
MTSU Department of Biology
Department of Chemistry at MTSU
MTSU Computer Science
MTSU Engineering Technology
MTSU Plant and Soil Science Club
MTSU ROTC
Women In STEM Center at MTSU
dds.mtsu
MTSU AKAs
Organization of Black Aerospace Professionals MTSU Chapte
American Medical Student Association MTSU Chapter

ENGINEERING TECH.

MTSU Engineering Technology students' gadgets on display at Mech-Tech Expo

A robotic sack lunch machine caught everyone's attention during the annual **MTSU Engineering Technology Mech-Tech Expo**. Automated greenhouses and a multisensor device for testing water did so as well.

A hands-free system for monitoring a person's body temperature to fight COVID-19 transmission brought a real-life aspect to the two-hour event, held Thursday, April 29, on the **Murphy Center** track.

MTSU Engineering Technology Department seniors and graduate students displayed their projects and experimental vehicles during the in-person event that followed university protocols requiring face masks and social distancing from participants.

The popular "Compact Cafeteria" (sack lunch dispenser) was a spin-off from the five-man team's peanut butter and jelly project to make a sandwich in 2019, said Jose Rubio, a senior mechatronics engineering major from Murfreesboro and formerly from Springfield, Tennessee.

"We thought we would make something else this year," he added, saying the original project two years ago "included a lot of research" in (James E.) Walker Library.

A future mechatronics engineering student and current aerospace professional pilot major were amazed at the creative technology on display.

An overview of the crowd attending the spring 2021 Engineering Technology Mech-Tech Expo on the track level inside Murphy Center Thursday, April 29. Students presented their senior projects and posters, which were judged by industry professionals. (MTSU photo by Andy Heidt)

Central Magnet School senior **Sam Apigian**, attending with parents **Charlie** and **Trisha Apigian**, said "it was really interesting to see how they (MTSU students) went more above what we're doing at Central," where they wrote a thesis for their own expo. Ours was a simpler version of this."

Sam Apigian, whose father is co-director of the MTSU Data Science Institute, will join the mechatronics program this fall, saying he's "pretty excited" about the opportunity. "It should be a lot of fun. Being on my own robotics team since the sixth grade is how I became interested in it and I want to continue my passion."

Freshman **Tyson Mickie**, an MTSU baseball player and aerospace major, spent nearly the entire time asking questions about the solar boat and Society of Automotive Engineers Baja vehicle.

"To see the Baja and how the individual parts function is amazing — much more than seeing it on paper. … I want to go home and build my own thing."

Department Chair **Vishwas Bedekar** shared news about 2020-21 awards and scholarships. **Department of Chemistry** Chair **Greg Van Patten**, who has been named interim **College of Basic and Applied Sciences** dean starting July 1, also attended.

— Randy Weiler (Randy.*Weiler@mtsu.edu*)

MIDDLE TENNESSEE STATE UNIVERSITY
COLLEGE OF BASIC AND APPLIED SCIENCES

What's Happening in CBAS?

ENGINEERING TECH.

Hannah Davis, left, of Murfreesboro, left, waits for her food and beverage items to drop out of the "Compact Cafeteria" project as team member Jose Rubio explains how the technology works Thursday, April 29, during the annual MTSU Engineering Technology Mech-Tech Expo. (MTSU photo by Andy Heidt)

Daniel Reissner, MTSU senior mechatronics engineering major, checks the reliability of the Automated Temperature Tester Thursday, April 29, at the annual MTSU Mech Tech Expo featuring Engineering Technology students and their senior projects and posters on the track level of Murphy Center. (MTSU photo by Andy Heidt)

MTSU seniors Caileb Reed, right, of Chattanooga, Tenn., and Barry Andreti, second from right, of Birmingham, Ala., explain their Automated Garden project while seniors Chase Berthelson, left, of Arlington, Tenn., Jacob Hendrixson of Murfreesboro, Tenn., Derek Lipinski of Erie, Pa., and event judge, MTSU alumnus and Murfreesboro businessman Jimmy Davis listen Thursday, April 29, during the Mech-Tech Expo. (MTSU photo by Andy Heidt)

MATHEMATICS

NEWS FROM ACTUARIAL SCIENCES

- Exams: 1) Actuarial students, **Zuyu Chen**, **Jacob Stinson**, **Zhiang Wang** passed Exam-P/1 2) Actuarial alumni, **Zhenyang Wang** (MSPS 2019) passed Exam-PA, **Hongli Li** (BS-AcSc 2017, MSPS 2018) passed exam-FAP 3) Actuarial faculty, **Dr. Vajira Manathunga** passed Exam-LTAM, the 5th Actuarial Exam from the Society of Actuaries (SOA); **Dr. Lu Xiong** passed Exam-FAP, the last and the 7th exam to become an Associate of the SOA (ASA). Lu has received an invitation to take APC workshop before officailly becoming an ASA of the Society of Actuaries.
- Job placement news: 1) Internships: **Alex Dyrample** (MSPS 2021, expected) is interning with Fortitude-Re in S2021. **Jacob Stinson** (MS-Math 2022, expected) will intern with SIGMA Actuarial Consulting in the summer of 2021. 2) Jobs: Alimni **Chunlan Jia** (MSPS 2019, MS-Math 2020) took a job at the Huagui Life Insurance at Beijing, China; **Zhenyang Wang** (MSPS 2019) accaepted an actuarial analyst position at LiAn Life Insurance at Shanghai, China. 3) Both **Ziren Chen** and **Lin Feng** (BS-AcSc 2018 and MS-Math 2021 (expected)) received admission and a full scholarship to a Ph.D. program at Iowa State University. 4) **Qiannan Shen** (BS-Acsc, May 2021 (expected)) and **Kejun Wang** (BS-AcSc, December 2020), received admission to UIUC actuarial science program for their MS studies.
- CAS Travellers Case Competition: MTSU sophomore student, Tanner OGrady, **was selected by the Casulty Actuarial Society (CAS) and participated the 2021 Traveller's Case Competition. Their team won the competition. Congratulations!**
- Research grants: 1) Don Hong, together with Vajira Manathunga, Qiang Wu, and Lu Xiong received a research grant from the Casulty Actuarial Society on AI techniques for Predictive Analytics. 2) Lu Xiong received an external grant support from a healthcare technology company for developing a healthcare data integration system.

MILITARY SCIENCE

Graduating MTSU cadets exhibited 'energy, passion, dedication'

U.S. Army Lt. Col. **Carrick McCarthy** praised his fifth group of graduating MTSU cadets "for their energy and passion for learning that has been unmatched."

Keith M. Huber, guest speaker for the 2021 **Blue Raider Battalion Spring Commissioning Ceremony**, provided a message about "appreciation, preparation and dedication" in addressing the 11 seniors being commissioned as second lieutenants.

With family and friends attending the in-person ceremony Friday, May 7, in the Student Union Ballroom, the newest ROTC alumni were given a heartfelt sendoff as they begin their Army careers and next chapters in their young lives.

The commissioning ceremony is a tradition for the ROTC program, which has seen the student cadets prepare for service to their country.

McCarthy, an MTSU military science professor, said the seniors "impressed me with the bonds they have formed with each other and the dedication they have demonstrated with this program. … These cadets have been adaptable and resilient during a worldwide pandemic."

Huber, senior adviser for veterans and leadership initiatives and retired lieutenant general, congratulated them for reaching this milestone and "having strength of character from their parents" and realizing hard work pays off.

"Welcome to your day of preparation," Huber added. "Life is a classroom and every day is a perpetual quiz. … Take this time to prepare yourself. Focus on what bonds us together. The reality is we may never return home. Be physically and emotionally prepared."

Maggie Potter, 22, of Maryville, Tennessee, said she's "very excited for the opportunities coming up." She will be a medical services officer in Anchorage, Alaska, with eventual plans to attend medical school. The biology major said she "had worked really hard for it (this moment) and this is the culmination of the hard work."

In addition to Potter, others commissioned as second lieutenants included:

- **Brian Acosta** of Murfreesboro. He earned a master's in criminal justice and will be active duty in the Aviation Branch.
- **Alexis Allen** of Lewisburg, Tennessee. She earned a bachelor's in computer science and will be active duty in the Armor Branch.
- **Jordan Anderson** of Morristown, Tennessee. He graduated with a bachelor's in concrete management and will be active duty in the Engineer Branch.
- **Kaleb Fanning** of Manchester, Tennessee. He earned a bachelor's in biology and will be active duty in the Chemical Branch.
- **Arne Fisher** of Smyrna, Tennessee. He earned a bachelor's in criminal justice and will be in the Adjutant General Branch in the U.S. Army Reserve.
- **Tierria Groves** of Memphis, Tennessee. She graduated with a bachelor's in foreign language and will be in Quartermaster Branch of the U.S. Army Reserve.
- **Jordan Plumb** of La Vergne. She earned a bachelor's in psychology and will be active duty in the Quartermaster Branch.
- **Joshua Smith** of Leoma, Tennessee. He graduated with a bachelor's in criminal justice and will be active duty in the Military Police Branch.
- **Eric Vaughn** of Franklin, Tennessee. He earned a bachelor's in business administration (finance concentration) and will be active duty in the Field Artillery Branch.
- **MicKayla Wilkinson** of Riceville, Tennessee. She graduated with a bachelor's degree in psychology and will be active duty in the Chemical Branch.

Nine of the graduates will attend basic officer leadership courses at various locations. Anderson, Plumb, Potter, Smith and Vaughn will also attend Camp Cadre at Fort Knox, Kentucky.

- Randy Weiler, news and Media

Eleven of the U.S. Army's newest commissioned second lieutenants take the Army Oath, administered by Lt. Col. Carrick McCarthy, an MTSU military science professor who leads the program, Friday, May 7, during the Spring Commissioning Ceremony in the Student Union Ballroom. (MTSU photo by J. Intintoli)

Newly commissioned U.S. Army 2nd Lt. Arne Fisher, left, receives his First Salute and gives a silver dollar to Sgt. 1st Class Kathryn Rayburn during the MTSU Blue Raider Battalion Spring Commission Ceremony . An Army tradition, newly commissioned second lieutenants hand a silver dollar to the first enlisted soldier who salutes them. (MTSU photo by J. Intintoli)

U.S. Army Lt. Col. Carrick McCarthy, an MTSU military science professor talks about the graduating Army ROTC cadets before introducing guest speaker Keith M. Huber, senior adviser for veterans and leadership initiatives, during the in-person Blue Raider Battalion Spring Commissioning Ceremony. McCarthy leads the MTSU ROTC program. (MTSU photo by J. Intintoli)

PHYSICS & ASTRONOMY

MTSU's First: Jones, Terletska receive prestigious National Science Foundation Grants

MTSU faculty members **Seth Jones** and **Hanna Terletska** hold a distinction no other **Middle Tennessee State University** professors have ever obtained — **National Science Foundation Early Career Development (CAREER) grant** recipients. The NSF CAREER awards support junior faculty who exemplify the role of teacher-scholars through research, education and the integration of education and research within the context of the mission of their organization. Jones is in the **Womack Educational Leadership Department**; Terletska is in the **Department of Physics and Astronomy**.

Given annually, the award comes with a federal grant for research and education activities for five consecutive years. Combined, their grants total nearly $1.2 million.

The recognition is considered the National Science Foundation's most prestigious awards for early-career faculty. The NSF receives more than 50,000 competitive proposals for funding each year and makes about 12,000 new funding awards.

"Congratulations are in order for these two outstanding MTSU faculty members at this point in their careers," university President **Sidney A. McPhee** said. "This is a testament to their determination to be highly successful researchers and educators, and a mentor to their students. I believe this will be a catalyst for other faculty researchers to apply for their own grants as well."

The organization selects CAREER recipients based on their "potential to serve as academic role models in research and education and to lead advances" in their fields and organizations.

The NSF awarded $499,879 to Terletska, an assistant professor, for her "Beyond Ideal Quantum Materials: Understanding the Critical Role of Disorder and Electron-Electron Interactions" proposal. The development plan is a fundamental research, education and outreach program that focuses on theoretical and computational study of functional quantum materials with strong electron-electron interactions and disorder.

Jones, an assistant professor, received a five-year, $700,000 NSF grant for his "Supporting Statistical Model-Based Inference as an Integrated Effort Between Mathematics and Science" proposal that seeks to design opportunities for middle school math and science teachers to coordinate their instruction to support a more coherent approach to teaching statistical model-based inference.

MTSU assistant professors Hanna Terletska, left, from the Department of Physics and Astronomy in the College of Basic and Applied Sciences and Seth Jones from the Womack Educational Leadership Department in the College of Education are recipients of National Science Foundation Early Career Development grants totaling nearly $1,200,000 combined for five-year research projects. This marks the first time MTSU faculty have received NSF CAREER Awards. (MTSU photo by Andy Heidt)

Jones' award began Feb. 1 and ends Jan. 31, 2025. Terletska's award starts May 1 and ends April 30, 2025. Both will include student involvement.

Provost **Mark Byrnes** said that "winning two CAREER grants in the same year is a remarkable achievement for MTSU and demonstrates the high-quality research conducted by our faculty."

David Butler, vice president for the College of Graduate Studies and vice provost for research, said NSF CAREER Awards "are very rare and difficult to obtain as they are for the top junior scholars in their fields."

"We are extremely proud of the efforts by Drs. Terletska and Jones on their remarkable accomplishments to date," Butler added. "Their success is a symbol of how MTSU is transforming into a research university, producing valuable research and development for the state of Tennessee and its citizens, fulfilling the role of a publicly supported state institution."

— Randy Weiler (*Randy.Weiler@mtsu.edu*)

Professor's creativity with garage classroom helps MTSU physics students thrive during pandemic

When the onset of the COVID-19 pandemic directly impacted the MTSU campus during the 2020 spring break, technology-savvy Daniel Erenso became creative and did something out of the norm.

The Department of Physics and Astronomy professor, now in his 17th year at the university, converted his garage into a classroom environment for remote learning during the lockdown for two upper-division courses for physics majors.

That's not all Erenso, a theoretical physicist by training who simultaneously evolved into an experimental physicist through the years, accomplished during this strange year.

With the COVID crisis still affecting MTSU in the summer, Erenso began writing a textbook for remote learning to open up previously canceled classes. His idea was shared to Provost Mark Byrnes by department Chair Ron Henderson, who has asked Erenso to train fellow faculty members with this method. The book has been accepted for expedited publication by the Institute of Physics, a popular European publisher, he said.

Erenso, 49, a Christiana, Tennessee, resident, is designing the 400-page book, "Real and Virtual Lab for Introductory Physics II," to be utilized online because of embedded links for students to visit websites for their simulated labs. It met a January 2021 deadline and is now in production.

Erenso began producing several YouTube videos for introductory Physics II availability to students and the public for the fall semester. A trial lecture from his makeshift classroom can be found here. An intro to Physics II video clip about "magnetic field" from the fall semester can be found here.

Erenso, a respected member of the physics faculty, said 2020 was "very challenging and exhausting." This included fall finals for his students, then meeting book project deadlines while teaching this semester. "I am very much looking for things to go back to normal," he

added.

As for the garage classroom to continue in the spring semester, Erenso said he wanted "to figure out how to deliver material to students without losing the on-ground feeling" — and with only a week to make it happen.

Erenso purchased and mounted six, 8-by 4-foot dry erase wipe boards and a Swivl robot designed for an iPad, with a camera to automatically capture him speaking in whatever direction he chooses to move around in the "new," remote classroom. He uses blue patches to help with glare from lighting.

Erenso nicknamed it "Anticov," sharing the name with his freshmen and second-year students early in the semester.

Regarding facing and conquering coronavirus issues, Erenso's optimistic viewpoint is this: "Challenges open the door to new opportunities and opportunities lead to rewards," he said.

Erenso communicates with students and their questions quickly by text or by phone. He made "a lot of experiments to make sure they are well-suited for students," he said.

In the extra spring break week last March, several students volunteered to remotely observe Erenso prepare for his online classes, making sure he didn't leave anything out.

"My main goal during the pandemic was to make sure students did not miss things," he said.

Daniel Erenso, Physics & Astronomy faculty. (Photo: Andy Heidt)

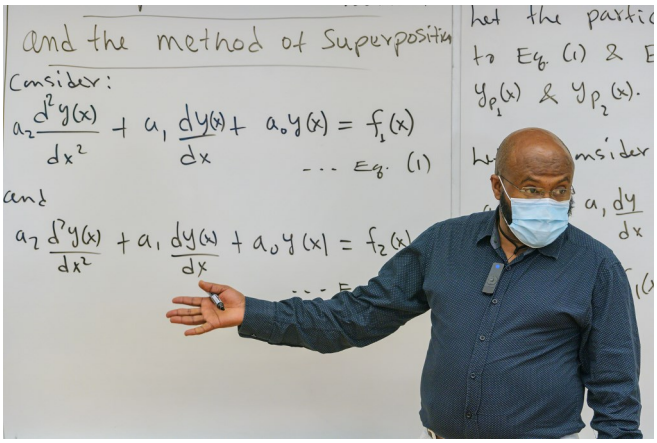
Fulbright award leads to 'recruits,' research advances

Erenso's prestigious Fulbright Teaching/Research award — he taught two semesters and performed quantum optics research at Addis Ababa University, his alma mater in Ethiopia — led to him inviting two Addis Ababa students to pursue physics graduate research work at MTSU.

Erenso's prestigious Fulbright Teaching/Research award — he taught two research MTSU Physics and Astronomy hosted Endris Mohamed, who defended his thesis and graduated with his doctorate in December 2019, and Mulugeta Seta, who Erenso anticipates defending his thesis and graduating within a year. Erenso mentors both remotely during COVID.

"This collaborative research has focused on the effectiveness of various curative and noncurative therapies used to treat hemoglobin disorders, specifically sickle cell disorders and various types of cancer, using a laser trapping technique," he said.

"Employing this technique, I have been studying living cells, particularly human red blood cells and various types of cancer cells, to identify new biophysical and biochemical properties of a living cell at the cellular, molecular and atomic levels," he added. "The main goal of such work is to develop better therapy predictors, diagnoses and treatments in hemoglobin disorders and various types of cancers."



Daniel Erenso, Physics & Astronomy faculty, in Wiser-Patten Science Hall. (Photo: Andy Heidt)

This has led to recent "exciting and puzzling new physical processes that may be applicable in diagnostic medicine and electromagnetic energy generation and harvesting," Erenso said.

"In the biomedical optics lab at MTSU, we are able to annihilate a living matter and transform it into energy," he added. "Using tens of microliters of blood or cancer cells, it is possible to generate intense electromagnetic radiation. We hypothesize a spectroscopic analyses of this emitted electromagnetic radiation can uncover the biochemical and biophysical properties of cells in a whole different way."

COVID has not slowed his research. "Data is still being analyzed and manuscripts are being written for publication," he said. When Wiser-Patten Science Building was renovated, with leftover funds, Erenso "proposed a lot of things to take my research to the next level."

A high-powered ultraviolet laser and an advanced microscope — for laser trapping and spectroscopy to study the treatment of cancer cells — were requests that were fulfilled.

The original book

Erenso's "other book" has been in the works since 2003, about the time he began teaching at MTSU. It is a six-volume book in Theoretical Physics. The first volume, titled "Theoretical Physics Volume I: Mathematical Physics" which is about 700-pages designed for three-semester course, is due in April 2021, but he may request an extension.

"Every year, I have been changing it up and improving it," he said. "I acted on it after being contacted by this publisher in spring 2019. It is a combination of this course and four other courses. I sent them the link. They sent me a proposal." Erenso took a sabbatical in fall 2019 to work on the project.

Erenso has many accolades, peer-reviewed publications and international presentations to his credit. He was nominated for the2020 American Physical Society Distinguished Research Award, but did not receive the honor

.

— Randy Weiler (*Randy.Weiler@mtsu.edu*)

COLLEGE NEWS

Middle Tennessee State University TN STEAM Festival Events

While one might have worried that the 4th annual Tennessee STEAM Festival wouldn't happen because of the challenges of COVID 19, thanks to many presenters – including 6 from MTSU – the Festival continued to flourish. The TN STEAM Festival had more than XXXX events over ten days (Oct 9-18), and its impact continues through virtual recordings of events. The Festival reached across the state – from west, to middle, to east Tennessee –and engaged people of all ages. Here is a sampling of the ways in which MTSU shared their passion for science, technology engineering, art and math.

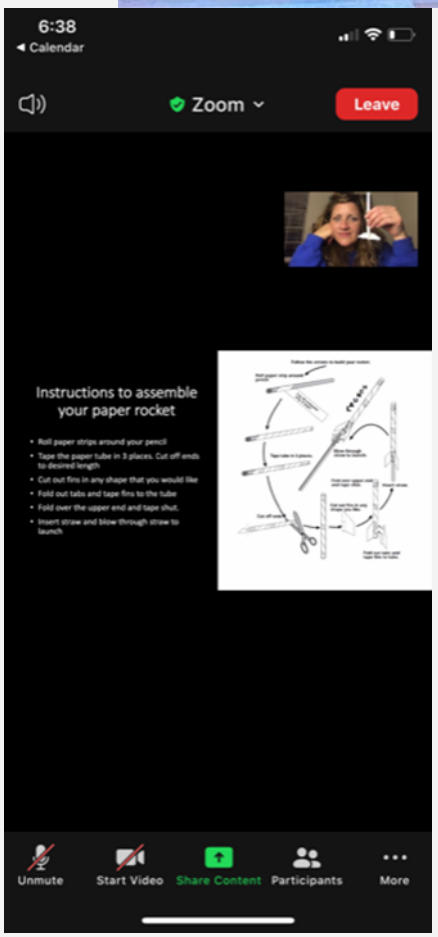
Heather Brown led a virtual program called Bridges, Roads, Buildings, & Pumpkins. She, along with students, discussed all of the components of concrete – complete with samples – and then led a virtual workshop in which students from Patterson Park made their own concrete pumpkins (noting that this was just in time for Halloween)!

The pursuit of a degree in concrete and construction is one STEM pathway. So is sharing one's passion with others. Whether one chooses math, technology or the science of concrete depends on early exposure to science – and it is people like the teachers that come out of MTeach that help make STEM futures possible. During the festival, Robin Bollman, also in partnership with students, facilitated several virtual at home activities that included building a rocket. Participants were provided with a list of materials to gather prior to the event and were then able to participate in real time. Not sure whether the students or teachers had more fun!!

Appreciating that 2020's Festival was in the midst of the COVID 19 pandemic, a significant number of events were either virtual or if in person, were outside. But no worries – MTSU's arboretum was the perfect place for outdoor explorations. Thanks to Kim Sadler as well as the Tennessee STEM Education Center at MTSU, there were opportunities to explore STEAM when you wanted. Anyone could go on a walk and determine "What's That Tree" – virtually or in person! If you toured MTSU's arboretum - virtually or on the ground – you would have discovered that MTSU has more than 100 species of trees and shrubs on the 500-acre campus. Three different trails led to 30+ species of mostly native Tennessee trees. Copies of the tree guide were available in the MTSU Science Building Atrium or Cope Administration Building – perhaps it's not too late to get out and explore! Even if you didn't get out and about during the Festival, remember that STEM is all around us 365 days an year! STEM-themed scavenger hunts, developed by the Tennessee STEM Education Center at MTSU, illustrated that STEM is all around us with their STEM themed scavenger hunts for PreK-2nd, 3rd-5th, 6th-8th, & High School.

And for those looking for an in depth examination of a topic, you could explore creativity and the connection of art and science. Lando Carter, in partnership with the Rutherford Arts Alliance, explored creativity and the misperception that creativity happens in flashes of genius. And to end the spectacular festival was a conversation between Preston MacDougall and Martin Kemp, an Emeritus Research Professor in the History of Art at Oxford University, and a world authority on imagery in art and science from the Renaissance to the present day.

- Dale McCreedy



COLLEGE NEWS

CBAS Science Saturday's Have Been a Success!

How many have been held? In fall 2020 two were held, in spring 2021 two have been held with another scheduled April 10th. Two additional dates were scheduled, but were cancelled due to weather and Covid #s.

How many students have attended? In fall 2020 thirty-seven total

MSPS Fall 2020 Internship Presentation Day

The MSPS students did their fall 2020 internship presentations on Thursday, December 3, 2020, via Zoom. We had fifteen total students presenting. Since most healthcare organizations are not allowing students into their facilities, many health care informatics students did a research project instead of a traditional internship.

The following students presented:

Actuarial Science
Huilin Huang – Guangxi Investing Inc. (China)

Biostatistics
Heaven Lee Anhalt – MTSU MTEngage
Simur Bezabih – Tennessee Department of Health (Nashville, TN)

Biotechnology
Alfredo Delgadillo – VanaLabs (Brentwood, TN)
Darci Muraske – Cairn Diagnostics (Brentwood, TN)

Fermentation Science
Jordan Bevill – Pennington Distilling Co. (Nashville, TN)
Shannon Hendrick – Mad Malts Brewing (Huntsville, AL)

Health Care Informatics
Kristopher Dabney – University of Tennessee (Knoxville, TN)
Kristen Hedgepath – MTSU, Dr. Mina Mohebbi
Kamna Joshi – MTSU, Dr. Misagh Faezipour
Mahsa Karshenas Najafabadi – MTSU, Dr. Stoney Brooks
Sarah Khan – Spero Health (Brentwood, TN)
Akua Kuffour – MTSU, Dr. Misagh Faezipour
Hannah Maina – MTSU, Dr. Stoney Brooks
Salina Zuniga – MTSU, Dr. Misagh Faezipour

- Suzanne Hicks,
MSPS Coordinator

COLLEGE NEWS

Publications, Awards and Other Accomplishments

- Seo, Suk J.; "Fault-tolerant detectors for distinguishing sets in cubic graphs," Discrete Applied Mathematics Volume 293 (2021) pp. 25-33.
- Devin C. Jean and Suk J. Seo, "Optimal Error-Detecting Open-Locating-Dominating Set on the Infinite Triangular Grid," Discussiones Mathematicae Graph Theory. (2021) In press.
- Paudel, K.; Xu, S.; **Hietsoi, O.**; Pandey, B.; Onuh, C.; Ding, K., Switchable Imine and Amine Synthesis Catalyzed by a Well-Defined Cobalt Complex, *Organometallics*, **2021**, *40*, 418–426, https://doi.org/10.1021/acs.organomet.0c00727
- Saraei, N.; Gupta, A. J.; **Hietsoi, O.**; Frye, B. C.; Hofsommer, D. T., Sumanasekera, G.; Gupta, G.; Mashuta, M. S.; Buchanan, R. M.; Grapperhaus, C. A., Small molecule crystals with 1D water wires modulate electronic properties of surface water networks. *Appl. Mater. Today*, **2021**, *22*, 100895. https://doi.org/10.1016/j.apmt.2020.100895
- Kapuściński, S.; Abdulmojeed, M.; Schafer, T.; Pietrzak, A.; **Hietsoi, O.**; Friedli, A. C., Kaszyński, P., Photonic materials derived from the [*closo*-$B_{10}H_{10}]^{2-}$ anion: Tuning photophysical properties in [*closo*-$B_{10}H_8$-1-X-10-(4-Y-NC_5H_5)]$^-$. *Inorg. Chem. Front*. **2021**, *8*, 1066−1082. https://doi.org/10.1039/D0QI01353F
- Calvary, C. A.; **Hietsoi, O.**; Hofsommer, D. T.; Brun, H. C.; Costello, A. M.; Mashuta, M. S.; Spurgeon, J. M.; Buchanan, R. M.; Grapperhaus, C. A., Copper bis(thiosemicarbazone) Complexes with Pendent Polyamines: Effects of Proton Relays and Charged Moieties on Electrocatalytic HER, *Eur. J. Inorg. Chem*. **2021**, 267–275. https://doi.org/10.1002/ejic.202000774
- Freshmen undergraduate researcher in biology, Aaron Gatewood, won the outstanding Clay M. Chandler Outstanding Freshman Award and Scholarship
- Senior undergraduate researcher in biology, Thipphaphone Niravong, won the Freeman P. Jordan, Jr. Scholarship award
- Dr. Elizabeth Barnes published this paper: https://www.lifescied.org/doi/full/10.1187/cbe.20-09-0213#:~:text=In%20this%20study%2C%20we%20focused,CSI)%20in%20the%20biology%20community.&text=We%20found%20that%20students%20conceal,identities%20to%20counteract%20negative%20stereotypes.
- Dr. Elizabeth Barnes was interviewed and highlighted by the American Association for the Advancement of Science (AAAS) program on the Dialogue on Science Ethics and Religion (DoSER). The interview was published on their website here: https://www.aaas.org/programs/dialogue-science-ethics-and-religion/profiles-science-engagement-faith-communities
- **The American Concrete Institute (ACI) awarded Dr. Heather J. Brown, SCCM,** the Joe W. Kelly Award, bestowed *specifically "for helping define, guide, and develop the nationally renowned Concrete Industry Management Program, thus helping prepare future leaders for the concrete construction industry."*
- **Dr. Blake Whitman** of SCCM was recognized at the 2021 International Erosion Control Association Conference with the Technical Paper of the Year Award for his work on identifying the relationship between different wattle filter media composition and sedimentation control on construction sites.
- **Dr. Blake Whitman, SCCM,** was named as a recipient of one of Four Outstanding Professionals Under 40 Award by the IECA. The award recognizes professionals that demonstrate excellence in natural resource conservation and environmental protection. The International Erosion Control Association, with members from 30 countries spanning 22 fields of professional practice, is a non-profit organization providing education, networking, and research for engineers, government, consultants, construction and related professionals, for the purpose of establishing standards of practice and expertise in the fields of erosion control, sediment control and stormwater management.
- Hui Jin, Tony V. Johnston, Seockmo Ku, and Geun Eog Ji. **Effect of Exopolysaccharide produced by *Weissella confusa* VP30 on constipation: A randomized, double-blind, placebo-controlled study.** Food Microbiology (In Review).
- Deokyeong Choe, Soo Min Song, Chul Soo Shin, Tony V. Johnston, Hyung Jin Ahn, Daehwan Kim, and Seockmo Ku. **Production and Characterization of Anti-Inflammatory Monascus Pigment Derivatives.** Foods 2020, 9(7), 858; https://doi.org/10.3390/foods9070858.
- Sini Kang, Tony V Johnston, Seockmo Ku, Geun Eog Ji. **Acute and sub-chronic (28-day) oral toxicity profiles of newly synthesized prebiotic butyl-fructooligosaccharide in ICR mouse and Wistar rat models.** Toxicology Research 2020 9(4): 484-492.
- Nayoun Hong, Seockmo Ku, Kyungjin Yuk, Tony V. Johnston, Geun Eog Ji, and Myeong Soo Park. **Production of biologically active human interleukin-10 by *Bifidobacterium bifidum* BGN4.** *Microb Cell Fact* **20,** 16 (2021). https://doi.org/10.1186/s12934-020-01505-y.
- Soyon Mann, Myeong Soo Park, Tony V. Johnston, Geun Eog Ji, Keum Taek Hwang, Seockmo Ku. **Isolation, Characterization and Biosafety Evaluation of Lactobacillus fermentum OK with Potential Oral Probiotic Properties**. *Probiotics Antimicrob Proteins* (**Accepted**, **2021**).
- Soyon Mann, Myeong Soo Park, Tony V. Johnston, Yeun Eog Ji, Keum Taek Hwang, Seockmo Ku. **Oral Probiotic Activities and Biosafety of *Lactobacillus gasseri* HHuMIN D**. *Microb Cell Fact* 20:75. https://doi.org/10.1186/s12934-021-01563-w**.**
- Jones, R and **H.G. Momm**, (2021). Index for Quantifying Geometric Point Disorder in Geospatial Applications. *Computer & Geosciences*, **151**, 104756.
- **Momm, H.G.,** R.L. Bingner, R.R. Wells, K. Moore, and G. Herring, (2021). Integrated Technology for Evaluation and Assessment of Multi-Scale Hydrological Systems in Managing Nonpoint Source Pollution. *Water*, **13**, 842.
- C. Castillo, **H.G. Momm**, R.R. Wells, R.L. Bingner, and R. Pérez, (2021). A GIS focal approach for characterizing gully geometry, *Earth Surface Processes & Landforms*, 1– 19 (https://doi.org/10.1002/esp.5122).

COLLEGE NEWS

Grants Awarded CBAS Faculty

Name		Department	Sponsor	Title	Co-PI	Amount
Jeffrey	Walck	Biology	Department of the Interior/ Fish and Wildlife Service	FY20 MTSU Pyne's ground-plum	Herlihy, Chris	72,840.00
Mengliang	Zhang	Chemistry	Department of Justice	Detection of Ignitable Liquid Residues in Fire Debris by Using Direct Analysis in Real Time Mass Spectrometry (DART-MS)	Chong, Ngee	285,229.00
John	Haffner	Agriculture	Boehringer Ingelheim Animal Health USA, Inc.	Does Trailering Affect the Response to the Thyrotropin Releasing Hormones Stimulation Test in Horses? (Study No, 020525)		5,200.99
Vishwas	Bedekar	Engineering Technology	TN Department of Commerce and Insurance	2021 Board of Architectural and Engineering Examiners Grant		20,000.00
Bud	Fischer	Dean, CBAS	Tennessee State University	To plan and host the virtual TLSAMP Research Conference in 2021		10,000.00
A partial list						$393,269.99

Research by MTSU duo, team adds up to national math recog-

An MTSU faculty member and student were part of a nationally recognized team. Members of the award-winning research team give their presentation at the recent Association of Mathematics Teachers Educators virtual conference. Participants included bottom row, from left, Demet Yalman Ozen of MTSU and Charity Cayton of East Carolina University; and top row, from left, Nina Bailey of UNC Charlotte, Jennifer Lovett of MTSU, Lara Kristen Dick of Bucknell University and Allison McCullouch of UNC Charlotte. (Submitted screen grab)

An **MTSU math** faculty member and doctoral student are a part of a national award-winning team.

Assistant professor **Jennifer Lovett** and graduate student **Demet Yalman Ozen**, both from Murfreesboro, recently earned the 2021 Association of Mathematics Teacher Educators National Technology Leadership Initiative award.

The team included doctoral candidate **Nina Bailey** and associate professor **Allison McCulloch** of the University of North Carolina Charlotte; associate professor **Lara Kristen Dick** of Bucknell University; and associate professor **Charity Cayton** of East Carolina University.

COLLEGE NEWS

They created a framework to teach undergraduates what to look for when trying to understand student thinking when the middle school or high school student is doing mathematics with technology.

The curriculum focuses on using real videos of high school students engaged in mathematics tasks that incorporate technology, Lovett said, adding that not only will the undergraduates learn mathematics and how to teach mathematics with technology, they get to experience real student responses to the task. That way, they can develop more knowledge about student thinking, to use when they are teachers.

Since 2000, the Society for Information Technology and Teacher Education, or SITE, has collaborated with four teacher education associations representing the content areas of math, science, English language arts and social studies education through the National Technology Leadership Initiative.

It marks the third time Lovett has received this national recognition — at MTSU in 2018 with a team that included Dick and McCulloch, on a pilot module for the curriculum before they received funding, and in 2015 while a North Carolina State University graduate student.

"It means a lot to receive this award," she said. "Not only because our field is valuing the work we are doing with our grant, but more importantly that this paper was led by two graduate students with myself and other professors providing support for them. I'm glad we could give them that experience and for them to see that their work was valued."

Lovett said the latest endeavor is work the team is accomplishing as a part of their National Science Foundation-funded grant for "Improving Undergraduate STEM Education — Preparing to Teach Mathematics with Technology-Examining Student Practices." The goal is to design curriculum for undergraduates, who are studying to be high school mathematics teachers, to use in their classes.

"My goal as an educator of future teachers is to teach the undergraduates how to understand how students are working on a math problem," she said.

"To do so, we teach them to attend to all the things students are saying and doing when solving the problem and then to determine what mathematics the students understand," she added. "When we use technology to teach math, it is more complicated."

Mathematics and Science Education
Doctor of Philosophy Program

Helping future math educators grow

Lovett commended the work and effort by Yalman Ozen and the mentorship of the MTSU Mathematics and Science Education Ph.D. program.

"It is an honor to be recognized for my work, particularly so early on in my program," said Yalman Ozen, 29, a native of Turkey. "It is overwhelming to think that I will be recognized by the Association of Mathematics Teacher Educators and thus the broader community of seasoned researchers in our field. I am fortunate to have brilliant mentors that have supported me through this process."

Yalman Ozen said their collaboration "took careful planning for the study, great teamwork and patience as we refined our work, and a serious passion for the topic."

She hopes to be a math department faculty member after graduating, "to teach courses for future teachers and contribute to creating, fostering and sustaining technology-rich teaching and learning environments as a researcher. My ultimate goal is to provide the same kind of mentorship to students that my mentors have provided to me."

Lovett said one of her graduate research assistant's main responsibilities is to watch videos of high school students working on the task and pinpoint moments that would be mathematically important for an undergraduate, who is learning to be a teacher, to watch.

"My goal as Demet's adviser is to help provide opportunities for her to grow professionally so that at the end of her time at MTSU she is ready to enter an academic position as a mathematics educator," said Lovett, who also mentors doctoral student Samantha Fletcher and other graduate and undergraduate students in the MTeach program. "To do that, I think it is important to provide mentorship on experiences like this with the intent that by the end of her program she is leading others on such efforts."

MTeach is an MTSU math, science and agriculture teacher preparation program designed to increase the quality and quantity of math and science teachers.

—Randy Weiler (*Randy.Weiler@mtsu.edu*)

CBAS recipients of the MT Engage Scholarship for 2021-22

#1 – Maria Hite
#2 – Beverly Raudry
#3 – Sarah Kerr

ENGAGE
Engage Academically.
Learn Exponentially.
Showcase Yourself.

Remember to check the CBAS Calendar for upcoming events at, http://www.mtsu.edu/cbas/calendar.php, can be found on the CBAS web page. Send all upcoming CBAS events to Marlene at Marlene.Lawson@mtsu.edu

Don't forget to connect with CBAS on facebook, instagram and twitter

COLLEGE NEWS

CBAS Scholars Week Poster Competition Results

The CBAS Research Committee is pleased to announce the results of the CBAS 2021 Scholars Week Virtual Poster Competition. Thank you to all participants in the virtual poster session. The contributed posters demonstrate a deep commitment to research across the college and provide insight into the variety of research taking place in CBAS. Congratulations to the winning authors and their faculty mentors!

Place	Presenter	Title	Department	Faculty Mentor
	Undergraduate Level			
1st Place	Laine Matthews, Thipphaphone Niravong Mariana De Araujo Bryan	Exploring Undergraduate Biology Students' Attitudes and Science Communication about COVID19 and COVID19 Vaccines	Biology	Liz Barnes
2nd Place	Emily Stafford	Influence of Varying Kudzu Leaf Meal Particle Sizes Added to a Broiler Diet	School of Agriculture	K. M. Downs
3rd Place	Cameron Maddux	Synthesis of Functionalized Peptoids Designed to Coordinate to Quantum Dots for Use in Biomedical Applications	Chemistry	Kevin Bicker
	Masters Level			
1st Place	Deborah Nwadibie	Mono- And Digalactosyldiacylglycerol Composition of *Pedinomonas minor*, *Pedinomonas sp.*, *Pyramimonas parkae*, *Pyramimonas obovata*: A Quest To Reconcile These Secondary Plastid Ancestors Of The Dinoflagellate *Lepidodinium chlorophorum* and Euglenid *Euglena gracilis*	Biology	Jeff Leblond
2nd Place	Fady Tawfik	An Advanced Convolutional Neural Network for Detecting Chest X-ray Abnormalities	Computer Science	Xin Yang
3rd Place	Juan Garcia Mendez	Toward Sustainable Municipal Solid Waste Management: Biogas Generation in Middle Tennessee Landfills	Engineering Technology	Mina Mohebbi
	Doctoral Level			
1st Place	Olukayode Shirove	Relativistic AnalyticalWave Functions For All Neutral Atoms from the Dirac- Hartree-Fock Calculations	COMS Program/ Chemistry	Anatoliy Volkov
2nd Place	Gabriel Toban	Interpretable CNN and GRU For REMSleep Stage Identification With Raw Single Channel EEG	COMS Program/ Mathematics	Don Hong
3rd Place	Thomas Torku	Epidemiology informed deep learning optimal control model forCOVID-19 vaccination strategy	COMS Program/ Mathematics	Abdul Q.M. Khaliq

CBAS Scholars Day Poster Winners

Undergraduate				
1st Place	Laine Matthew Mariana De Araujo Bryan Thipphaphone Nravong	See Above	Biology	Liz Barnes
2nd Place	Emily Stafford	See Above	School of AG.	K.M. Downs
3rd Place	Cameron Maddux	See Above	Chemistry	Kevin Bicker
Graduate				
1st Place	Kaylee Layton	Outside the Classroom: An Evaluation of Equine Internships	Equine Health	Holly Spooner
2nd Place	Fady Tawfik	See Above	Computer Sci.	
3rd Place	Juan Garcia	See Above	Engineering Tech.	Mina Mohebbi

MIDDLE TENNESSEE STATE UNIVERSITY
COLLEGE OF BASIC AND APPLIED SCIENCES

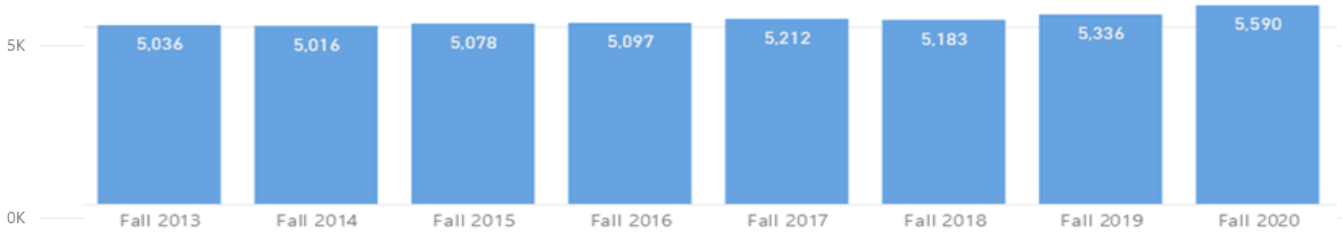
What's Happening in CBAS?

COLLEGE NEWS

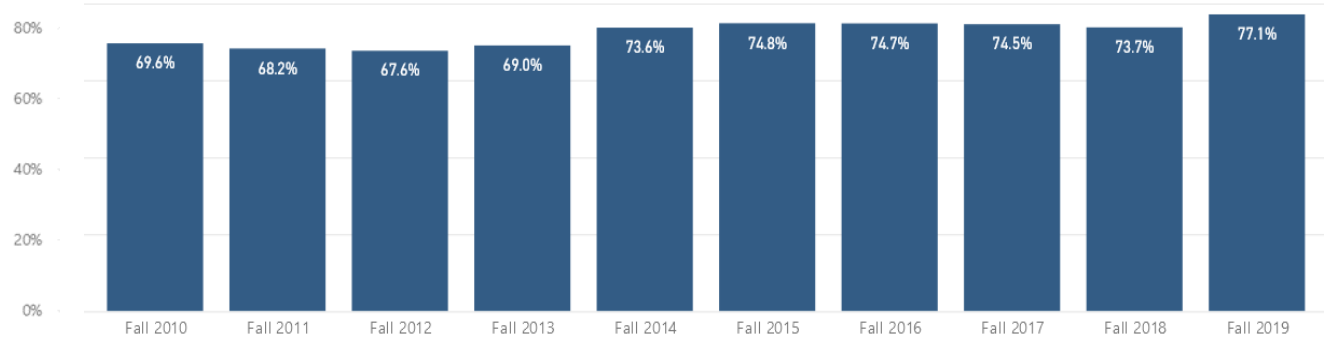
CBAS Enrollment & Graduation Data

(Information obtained from MTSU's Office of Institutional Effectiveness, Planning & Research)

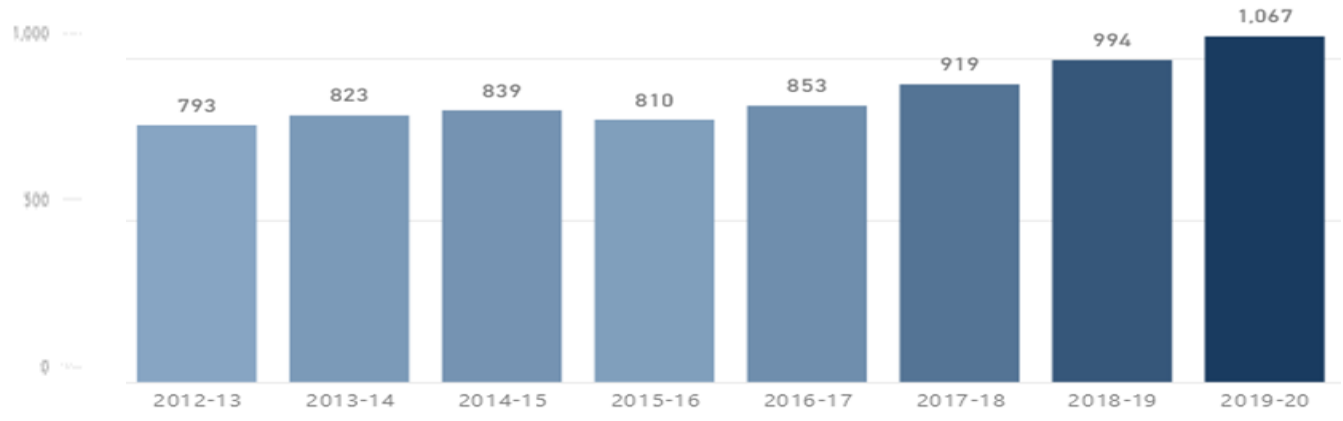
Headcount by Term



Fall-to-Fall Retention Rate Over Time Freshmen



Degrees Awarded by Academic Year



Degrees by Race/Ethnicity

Race	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
American Indian	2	3	4	1	2	3	3	4
Asian	53	61	70	90	111	115	123	121
Black or African American	70	81	93	84	83	78	83	114
Hispanic	19	28	33	22	38	41	52	60
Native Hawaiian or Other Pacific Islander	1	1	1	1	1	1		
Not Specified	7				1	1	8	5
Two or More Races	15	15	18	17	28	32	25	32
White	626	634	620	595	589	648	700	731
Total	**793**	**823**	**839**	**810**	**853**	**919**	**994**	**1,067**

COLLEGE NEWS

College of Basic & Applied Sciences

Dean's List for Spring 2021

AEROSPACE

Fahd Abbas
Andrew Charles Adams
Ivy Elizabeth Justine Adams
Logan Christopher Adams
Michael Shane Adams
Mohammed Ageeli
Adel Al Bu Kafitah
Bdar Adil A Al Gamdi
Ismail Abdullah Al Shaiban
Hussam Saleh M Alabdi
Bandar Faiz H Alahmadi
Ibrahim Waleed I Alajyan
Abdullah Mohammed A Alamoudi
Ahmed Sulaiman M Alamrani
Saleh Saad Alamri
Sultan Ibrahiam Alanazi
Ahmed Mohammed Alaqil
Eyad Alattas
Abdullah Khalid A AlBahouth
Mohammed Atiah H Albishri
Daniel Ramon Albor
Abdulrahman Mohammed Albukhari
Abdulrahman Ali A Alghamdi
Mohammed Abdullah S Alghamdi
Saeed Fisal S Alghamdi
Khaled Alghamedi
Raaed Adel AlHadlaq
Ahmed Fahad A Alharbi
Turki Sultan A Alharbi
Alwaleed Mohammed Q Alharthi
Muhannad Abdulrahman Alharthi
Ali Mohammed A AlHumaidi
Khalid Alhumaidi
Abdulrahman Mahmoud M Aljondi
Earl Steven Allen
Zachary Thomas Allen
Ahmed Mansour Almalki
Faisal Ahmed K Almalki
Abdullah Mohammed S Almehmadi
Abdulrahman Mohammed S Almesned
Fahad Khaled Almuhna
Salem Saleh S Almutairi
Mazen Nouruldeen H Alnami
Amjed Faisl Alnemari
Mohammed Alnemari
Abdulmalek Abdulrahman S Alomari
Rakan Abdullah Alomayrini
Salman Mohammed Alomri
Ahmad Khalid M Alotaibi
Tariq Saeed Alqahtani
Abdullah Yousef Alqubayi
Abdulelah Ahmed Alreedi
Emad Salman Alrushud
Abdulmalek Ahmad Alsaeed
Rayan Marzouq A Alsalhi
Ahmed Alsalmi
Ibrahim Alsamih
Nawras Khalid Alshanawani
Turki Nasser A Alshehri
Carly Brook Alsup
Abdullah Saleh Altaheeni
Abdullah Ibrahim Altalasi
Rasha Rushdi Alturki
Raef Alwafi
Abdulrahman Saleh A Alzahrani
Hussam Saeed A Alzahrani
Taqi Shafiq Alzayer
Jungjin An
Michael Peter Angeli
Abdulmoez Arab
William McNish Armstrong
Samuel Woodlee Arnold
Celin Artoonian Milagerdi
Azzam Mousa Asiri
Turki Hassan A Assiri
Marcus Austin Atchley
Faisal Abdulhameed M Attiah
Christopher Ayers
Waleed Ahmed S Bafana
Faris Baghdadi
Lucas C Bangerter
Cameron Lee Barnes
Dylan Zane Barr
Carter Hayse Bawcum
Dillon Brian Beckwith
Dontae S Beneby
Bradley Esteban Bernett
Russell Moffat Biesada
Benjamin Albert Bills
Fahad Nasser Bin Jurayyan
Abdulrahim Mohammed A Bin Mulayh
Abdullah Badr Binshraim
Jonathan David Blackburn
Nathan Alan Blair
Nancy Emilie Blankenship
Andrew S Blankinship
Kyle Houston Blasingim
William Andrew Boles
Mychal Jerome Bonds
Benjamin Reid Bonson
Haydy Adel Botrous
Colin M Bower
Chelsey Sierra Boyd
Willow Irina Branham
Allyson Paige Brogunier
Adam Jeffrey Brown
Jordan Allison Brown
Trey Michael Brown
Yousif Sami M Bukhari
Charles G Bunch
Jonathan Edward Burdekin
William Burdick
Cal M Burgett
Wyatt Alan Burnette
Jonathon Glenn Burt
Sydney Anne Butler
Anwar Tomas Butterfield
Collin Michael Byrne
Robert Tague Carlyon
Brittani D Cawthorn
Sydney Marie Celata
Matthew Alexander Champagne
Jordan D Chandler
Katelyn E Cherry
Fernando Daniel Cifuentes Sanchez
Adam Martin Clark
Anna May Clarke
Jordan Carl Click
John Thomas Cobble
Caleb Thomas Cone
Christopher William Connors
Derry Eldred Cook
Gene Edward Cook
Corwin A Cordell
Abigail Madison Cox
Samuel Vincent Crow
Morgan Ann Crowley
James Baron Cummings
Deon Shavonne Curry
Anthony Cuttino
Moayyad Ahmed Dabbos
Hunter Matthew Dalton
Jalen Dion Dangerfield
Barrett Lane Davis
Casey Mary Davis
Phillip Lee Dean
Alexander J Defazio
Keaton Nicole Dewitt
Danyssa D Diseker
Jacob Martin Dobbs
Charles Devin Driver
Daulton Trhea Duke
Chad Curtis Dunbar
Logan Matthew Duncan
Lucas Owens Duncan
Jonathan David Dunn
Benjamin Logan Durham
Adam Durrani
Benjamin Clarke Duval
Rhys Donavyn Dzurko
Brooke Renea Eason
Bradford Clark Eden
Eli Howell Edwards
Taylor D Eidson
Yishai Eldar
Ahmed Mohammed A Emam
Jack Kristofer Erickson
Jalen K Ervin
Michael C Ervin
Arden Carlisle Estep
Jonas Ean Farmer
Orrin Galloway Farmer
Tyler Edward Farmer
Mouyad Majdi M Fatani
Samuel Edward Feinstein
Lauren Nicole Fikar
Mohamed Abdulnasser Filimban
Tyler John Firman
Conor Thomas Flinn
Christian John Forbes
James Michael Ford
Cole Andrew Forth
Dalton Bryan Fowler
Jacob Samuel Fox
Lauryn Amelia Fox
Rachel Leigh Frankenberger
Brady A Fulton
Aidan Gregory Galdino
Adam Mark Gasper
Ahmed Salah H Gedair
Bryson Davis Gerhardt
Suhayb Yousef A Ghulam
John N Gilbert
Jack Heinrich Goldschmidt
Benjamin Alexander Gomez
Luke Elwood Gormsen
Charles Hamilton Graham
Samuel W Gray
Cian DeAnna Greer
Johnnie N Gregg
Elijah D Guffin

MIDDLE TENNESSEE STATE UNIVERSITY
COLLEGE OF BASIC AND APPLIED SCIENCES

What's Happening in CBAS?

COLLEGE NEWS

Dean's List for Spring 2021

Jacob C Gunter
Mario M Habib
Eli S Hale
Colby Ernest Hall
Mason Blake Hall
Tyler Hall
Sydney M Hamilton
Kennedy Grace Hampton
Brent A Hardin
Rylan Lynee Hardin
Haley E Hargrove
Michael Obryant Harris
Jacob R HarveyCaleb S Harville
Jacob L Hatfield
Charles T Hatke
Michael Frederick Helt
Atley G Henderson
Alejandro Hernandez
Jacob B Hicks
John Walter Hitch
Hayden John Hittle
Aaron M Hix
Chris Gia Hoang
Maxwell L Hodge
John Tyler Hogan
Luke Edward Hojnowski
Daniel Ryan Holcomb
William Russell Holder
Noah W Holland
Lucas Wayne Holly
Clay Matthew Holmberg
Joshua Horney
Kevin Lawrence Houston
Cade Tyler Howell
Terrence Xavior Hull
Logan Carver Huskey
Joseph Emory Hymes
Matthew Mark Ivey
Gabriel Garon Jackson
Jarret Keith Jenkins
Juliana Celeste Jenkins
Weitao Jin
Auws Mohammed A Kabouha
Kaleigh Butler Kantor
Grace Davis Keisling
Caitlyn Marie Kelly
Shannon K Kennedy
Jacob Ryan Kenney
Hamzah Abdurahman Khalid
Samantha Hanna Khoury
Colby P Killian
Hyunsup Kim
Korey Alexander King
Michael Blake King
Nicholas Dylan Kline
Jordan Kloepfel
Scott Matthew Kubiak
Brianna Lea Michelle Langford
Jeremy David Lankford
William Albert Lassiter
Frank Sidney Le Loup
Tanner James Leierzapf
Ashley Elizabeth Leonard
Gabrielle Andrea Lesher
Scott M Lewis
Austin Michael Lienhart
Alexander James Light
Jack Lyman Lockett
Hayden Paul Locum

Sean McCabe Logan
Dasan Dwight Lundy
Jennifer Renee Maaskant
Jay Carstens Magruder
Christian James Malach
Paul Hunter Marcu
Antonio Nino Mariani
Johnathan Scott Marquart
Riley Allen Marshall
Alexander Richard Martin
Jason Andrew Martin
Mohammed Ali M Masmali
Jacob Benton McClard
Cole Fredrick McClellan
Dakota Lee McDonald
Dylan Lee McDonald
Braedon Scott McGinnis
Shanandon C Mckenzie
Jack Donald McPherson
Jackson Brown Medley
Fletcher Abel Medlin
Jesse Jerome Meyer
Jose Luis Mezquita Benitez
Tyson Alexander Mickie
Kolby Blake Middleton
Wesley Garner Mitchell
Miguel Armando Montes
Joseph Matthew Morales
James Alexander Morgan
Robert S Murrah
Evan P Myers
Jonathan Orrett Nam
Cole Lawrence Eugene Naseman
Henry V Nguyen
Erik Nils Nilsson
Patrick A Nolan
Mitchell Kyung Oakley
Joshua Paul Odom
Marcus Hunter Olds
Charles Tanner Ott
Nay Paing
Cedric Tran Paktranon
Joseph Trent Palmich
Jadon Hector Parker
Cameron Jewel Paschal
Tarak Ankit Patel
Kent Walker Patterson
Evan Scott Payette
Jonathan O'Neal Pendergrast
Franklin Perry
Steven Tyler Perry
Sean Anthony Phelan
Maximus Alexander Phillips
Joseph M Pick
Jason Patrick Pickard
Wade M Pickett
Connelly P Pignocco
Seth I Pilgrim
Daniel T Pollard
Jaydon Andrew Poston
Jada Kiera Powell
Luke Allen Powell
Jack Glymph Ramsey
Jaxon Lee Rathert
Hiren Shailesh Rathod
Taylor Edward Reineke
Christopher Michael Renaud
Carter R Reynolds
Joshua Alexander Rhoads

William Thomas Richmond
Ronald Marc Robbins
James Logan Robinson
Ryan Alexander Robinson
Evan T Rodgers
Isabella K Ropski
Jacob Edward Rose
Jesse A-Navarrette Roseberry
Jacob Tyler Rottero
Jacob Lee Routh
Brady B Rucks
Colby J Rupp
Ryan Scott Russell
Zachary M Ryan
Omar Safiani
Christopher Thomas Samaha
Mason Jeffrey Schoonover
Timothy Evan Schultz
Nicholas T Sellers
Jacob R Semmler
Mohammed Abdulftah H Sendi
Abdulrahman Abdullah Shateah
Brandon D Shelnutt
Katherine Chandler Shipp
John Ledbetter Shumard
Spencer C Siefring
Cameron L Sims
Wisam Abdulaziz Sindi
Ryan Connor Sitton
Eric John Smith
Robert Lane Smith
Justin M Snodgrass
Daniel Cody Solomon
Jason Christopher Spada
John Christian Stanley
Kristian M Stanley
Matthew Robert Stanley
Phillip Michael Starnes
Carter Edward Staten
Andrew Joseph Stenzel
Amy M Stephens
Jana Elizabeth Stephens
Daniel T Stott
Isaiah J Strauel
Sudhev Sudheer
Emily Ann Swindell
Momo Takada
Marco Takla
Alexander J Tarpley
Divid M Tawadrous
Cody R Taylor
Warren Nolan Teachworth
Robert B Teal
Mark David Teets
Andrew Tenneriello
Katie M Thayer
Christopher Allen Thomas
Christopher Richard Thomas
Matthew David Thomasson
Ezekiel Dwight Thompson
Kiana Rose Thompson
Zachary Thompson
Alyssa Marie Thornsbury
Eli Joseph Tice
Landon Hall Tolar
Jaquez N Torian
Adrian Robert Trott
Chase Lawerence Truett
Chase Wells Truitt

COLLEGE NEWS

Dean's List for Spring 2021

Devan Michael Twyman
Alexandria J Valdivia
Noah W Vaughan
Aubrey Grace Vest
Cole A Vinson
Cyrus Minoo Wadia
Edwin H Walck
Brielle Marie Walmsley
Tyler Ray Walton
Patrick Kelly Weaver
Jackson Hayes Webb
Steven J Weber
Isaac Randall Wehner
Timothy W Whalen
William D White
Ryan L Wiberley
Eli Warner Widen
Christopher K Wilkes
Mercer Grey Wilkey
James T Williams
Jordan Amir Williams
Kinsley Teresa Williams
Logan Gunnar Williams
Nathan S Williams
Demaine Bertram Williamson
James Seth Wright
Joseph Wukasch
Jasper Scott Wynnemer
Kristopher Austin Yakes
Stephen Thomas Yatsko
Emily Elise York
Hannah Nichole Young
Luke W Young
Tony E Youssef
Majed Yaseen Zaitooni
Cole Joseph Zangerle
Joseph James Zimmerman
Moaid Mahmod Zowawi

AGRICULTURE

Austin Brian Aguilera
Luke Thomas Alexander
Shelby A Amanns
Mary Jane J Arnette
Emily Jade Beavers
Taylor M Benz
Samuel Park Birdwell
Alison Brooke Blanton
Eden Faith Bodary
Christopher Kenneth Boykin
Alyssa Nicole Bradbury
Haley Denae Brazel
Christopher M Bright
Mary Kathryn Briley
Kali Jordan Brock
Kara Nicole Brown
Maxwell D Buckner
Natalie Elizabeth Burkhart
Jana Hope Castro
Charity Nicole Chandler
Caleb P Cheatham
Hailey Alexandria Claybrooks
Vaughn Isaac Coblentz
Erin Nicole Coleman
Robert Conner
William Conrad
Gabriella Nurice Cote
Edward Burr Craig
Elizabeth Blake Curry
Journee Demyah Davis
Jordan Taylor Dillenbeck
Deshea Karie Duffer
Dylan Michael Duffer
Jake A Duke
Nicholas A Duke
Robert Crispin Read Eichas
Cory William Elks
Luke Autrey Elrod
Susan Kate Evans
Katherine Grace Everett
Audrey Belle Eza
Alaina Claire Farmer
Autumn Sage Farrell
Alison Rene Faulk
Calliope Anne Fisher
Rachel Madison Foster
Joseph Carl Fowler
Shelby ReneÃ© Fuller
Raina Chrisella Fullum
Tabitha Danielle Gill
Emily E Goolsby
Breonna Jenai Gray
Kelsi Griffin
Jennifer M Gutierrez
Logan J Hale
Gabrielle Rose Harder
Jantzen O Hayes
Caroline Alexandra Haynes
Alana R Hester
Tyler Andrew Hollingsead
Katelynn Michelle Hollingshead
Leanna Marie Hutchings
Ashley Elizabeth Jacobson
Jordan Elise Jungen
Wilson Lane Kelly
Addison Marie Kilgallon
Kirstenn Kaye Kimmel
Leandra Marie Koss
Mia Elise Kuhnle
Sydney Leigh Lamb
Molly Grace Lane
Jordan Paige Latham
Mackenzie Lynn Latimer
Samantha Renee Lewis
Kaitlyn Lindquist
Kennedy Nicole Littlepage
Richard Daniel Lowery
Esmeralda Lozoya
Bailey Elizabeth Lugo
Destinee Alexxandra Magley-Rosen
Eva Jean Manire
Karissa Evelyn Mankel
Fallon Paige Marshall
Angayla Rain Maxwell
Isabella Angelique Maynard
Abigail Doris McConnell
Sarah Elizabeth McMahan
Walker Caleb McNeal
Taylor Renae Meek
Stratton Allen Mehaffey
Baylee Anne Miller
Brendan Alexander Mitchell-Fostyk
Sarah Elizabeth Moe
Anna Beth Moore
Mason S Moore
Katherine Annalise Morrissey
Gabrielle S Mould
Julia Nichols
Destiny Bazaar Odds
Polina Dmitriyevna Ogboh
Bobby Gean Ogg
Osariemwen M Orhiekhoe
Rhiannon Leigh Overcast
Olivia Marie Peters
Wyatt Hicks Peterson
Mandy Lynn Porter
Madalyn Michele Rae Follis
Alexandra K Riggans
Farrah Brooke Roberson
Harold Owen Roberts
Bridget M Robertson
Kalyn F Rouse
Nicolle Lynne Scott
Shelby L Seamans
Parker Robert Sheffey
Ainsley J Slicker
Rhiannon Violet Speckman
Emily Kara Stafford
Philip George Stensgard
Carmen Elizabeth Swygart
Susan Marie Sylvis
Evan Charles Tapley
Alexis N Thompson
Kiahra A Thompson
Emily N Traylor
Jaci Angelica Vicente Velasquez
Jaliah M Walker
Rachel Lee Walton
Zoey A Ward
Bailey Marie Warren
Shelby Brooke West
Annie Rose Whitefield
Aidan John Wilson
Elias G Wooldridge
Emma E Yarbrough
Natia Maria Zawacki

BIOLOGY

Madeline Grace Aadnes
Sara Abdelmalak
Jozeph Nagy Abdelmaseh
Mina Khalid Abdulkareem
Karolin A Abouelyamin
Janna Miriam Abou-Rahma
Amina Henna Afzali
Feruza Dilmurod qizi Agzamova
Rezhin R Ahmad
Madison Athena Allen
Maryam Almosajin
Khadijah Ali Alnassari
Murtatha Alwan
Megan Gertrud Alyward
Kellie Alana Applegett
Camryn Mckenzie Arias
Mariam G Armanious
Madona Adel Aziz
Hardik Bansal
Jordan Nicole Barlog
Khamar-Karee Shakur Baruti-Muhammad
Nicole Maya Bashour
Kristen Marie Bassette
Kristen Taylor Beasley
Kendall Lauren Benedict
Lillian Allen Bergman
Callie Rose Berry
Rachel O Blount
Sara G Boles
Mariam Kamel Bolos
Miquellie Brucine Bonner

MIDDLE TENNESSEE STATE UNIVERSITY
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What's Happening in CBAS?

COLLEGE NEWS

Dean's List for Spring 2021

Maivel Hanna Boshra
Carmen Wahib Botros
Chloe Danielle Bowen
Hunter Wayne Brady
Infiniti Nehmia Bristol
Kwinci Victoria Hunter Britt
Mary-Allyson Brown
Jessica Bui
Chase Sullivan Burton
Gracen Ty Bush
Hannah Rose Carden
Cameron Nicole Carrero
Fatima E Castellanos
Anika Tasnim Chowdhury
Hailey Grace Clark
Sarah Angeline Clark
Michael Joseph Clem
Stephen T Clifford
Elizabeth Ann Clippard
Taylor Cohen
Tessa Christine Cote
Kimberly A Cox
Diana M Creagh
Brittany P Creasman
Aylin Esmerelda Cruz-Narvaez
Brionna Nicole Cunningham
Diamond M Davidson
Ezri Vaughn Davis
Tamia Arie Davis
Valerie Raeanne Davis
Mariana F de Araujo Bryan
Jennifer R Diep
Heather Ann Duffy
Ean McKnight Edgell
Kayleigh M Elliott
James Robert Evans
Alyssa D Everhart
Nicholas Isaiah Fanale
Dena F Fawzi
Sydney Alexandra Ferguson
Allison Ann Fikejs
Natalie Rachel Foster
Niah Jean Frantzen
Jewel Marie Galloway
Amber Vonne Galyon
Isabella Bay Gamble
Sarah Ann Garris
Martha S Gatas
Aaron B Gatewood
Samantha Joy Gatewood
Marina Serapion Ghobrial
Garet R Gibson
Vernisa Imani Vernice Gibson
Stefy Giles
Molly K Gilliland
John H Gilmore
Yaseen Mahmoud Ginnab
Marium S Gorgy
Jori Elizabeth Graeff
Katherine E Green
Whitlei A Green
Sheri E Grees
Tykeyah Ranyha Griffin
Lillian G Gulliver
Sara Stephanie Gutierrez
Bethelhem Gulilat Haile
Rawan N Haj-Hussein
Tadros A Hana
Mirna M Hanna
John David Harrington
Madison R Hatcher
Zoe Corinne Haws
Christopher Daniel Hedden
Matthew A Henning
Jonah William Hightower
Morgan E Hill
Joel Carrington Horvath
Leah A Hostetler
Daiche Fatima Issa
Brooke Grace Jackson
Alexis Kay Janke
Steffany Marie Jenkins
Madison O Jennings
Kala Domnique Jimcoily
Peyton C Jones
Mariam Michel Kalds
Daniel James Kennedy
Tiara M King
Katelynn Elizabeth Knois
Elizabeth Joan Kowalczyk
Sosna T Kumssa
John Maxwell Larsen
Audrey Marie Lauerhass
Travis Ray Lawson
Samira Claudia Lawson Body
Savannah Hope Lawwell
Christopher W Lee
Rikal Levy
Mariam Hani Lewiz
Brooks Ray Leyhew
Emma Claire Lloyd
Sarah Autumn Lowe
Marcus Vincent Luciano
Hannah Marie Lunnemann
Cameron Nicholas Maddux
Emily Rose Maldonado
Patricia Susan Markel
Caytlyn Marie Marland
Megan Ann Mason
Kirmina George Massoud
Jack Nesta Maxwell
Patrick Joseph McAtee
Garrett Decker Mercer
Geovany Ayman Mikhail
Aran Adnan Mohamad-Ali
Mohamud A Mohamed
Alaa Fatima Mohammed
Dirhat Mahdi Mohammed
Amber Marie Mong
Ansley Jade Morgan
Gabriella Sophia Morin
Neroosh M Mossa
Rana Sarwat Naeim Sharubem
Austin Kyle Nicholson
Zane Obeissy
Shadrach Chukwuyerem Ofoegbu
Diamond Nicole Oldham
Ashley Diane Olin
Jessica Marie Olson
Emily Katherine Oppmann
Denise Priscila Ortega
Lauren Paige Padgett
Jiwoo Park
Haley Nicole Parks
Jessica Renee Parnham
Ava Riana Parrott
Lacon A Parton
Akshar Dinesh Patel
Dhara Nita Patel
Eshan Kamlesh Patel
Mahima N Patel
Shivam Nikul Patel
Jarrett Michael Patmore
Maxwell S Pearson
Matthew Thomas Penny
Simon Eduard Pergande
Cassandra Lynn Perrone
Alan Xay Phasavath
Vandy Ivan Phengsykeo
Marissa LeiAnne Pickett
Kathryn A Pittman
Benedicta Nyarkoa Pongo
Olivia R Pool
Chase Alexander Poole
Anna Frances Pope
Radina Ivaylova Porashka
Maggie Ann Potter
Jacob William Pugh
Jennifer Marie Rankin
Youana Rezkalla
William D Richmond
Sydney S Robbins
Colleen Marie Roberts
Chelsea Victoria Ashley Rolle
Daniella Romasanta
Faith H Rumpp
Verina Y Saad Alla
Myra K Sabir
Ryan A Sabir
Yosab Sabry
Aziz Farid Sadek
Sandra Adel Shafeek Said
John M Saleb
Honar Y Saleh
Marian George Salib
Alexandra Nichole Sardo
Jesse Dean Scobee
Sebastian A Segura
Deanna Catherine Sekulich
Ferdaws G Sharhan
Sundus G Sharhan
Jillian P Sherer
Christopher Raymond Smith
Madison Victoria Smith
Sloane Westervelt Smith
Logan A Sobotta
Jacqueline Brooke Soderman
Sarah M Soliman
Mason Michael Speirs
John-Paul Richard Stafford
Alexis Katherine Stalker
Jacob Eli Stout
Chandra Subedi
Xina I Sulaivany
Charlene E Sullivan
Sarah M Sumida
Katherine Ellison Summers
Mallory Elaine Sykes
Mina G Tadros
Sandy N Thabet
Matthew James Thomas
Ramsey Paige Thomson
Madison Caitlin Titshaw
Sarah Naomi Torres
Ashli Townsend
Lindsey Ngoc Tran
Camilla Gabrielle Vasquez
Kaylee Elizabeth Vaughn
Brinley Elizabeth Vinson
Eden P Walkowski
Emily G Warner

COLLEGE NEWS

Dean's List for Spring 2021

Amber Nicole Washington
Olivia L Washington
Amira E Wasif
Carley Elizabeth West
Brandon Charles Westmoreland
Aaron Arthur White
Aaron Brennan White
Jacqueline Hanley Williams
Kendall N Williams
Sara Elizabeth Williams
Taylor R Wise
Kimberly A Wood
Morgan Wood
Britney V Xiong
Mina Ishak Yakoub
Sara Adel Yosef
Anna Rene Yuhas
Jayme M Zarr

CHEMISTRY

Batool Fawzi Abdel khalek
Christine A Adalikwu
Danuel Agib
Jeyar Yusuf Ahmed
Saba Aziz Albarati
Demua Adel Alsaleh
Bennett Mitchell Armstrong
Rija Asim
Fatemeh Bakhtiari
Aileen Ithzel Barrera Vite
Fady A Barsoum
Sabita Basnet
Ashton Christine Bazzell
ZaKaia Taney Bell
Cindy Anette Benitez
Bassam W Beshara
Darlia Tavarja Bethel
Chasen Aric Birdsong
Carly Diane Bowen
Amy E Brown
Thi Thanh Ha Bui
Clayton Zayne Carney
Kevin E Carrillo Rojas
William Chandler Cate
Kaylee M Chisam
Maria Fernanda Clark
Alana S Cochran
Kinsley T Cole
Michaela R Creech
Pierce R Creighton
Arianna Crimm
Curtis Hyde Dearing
Briza Marie Reyes Dedicatoria
Megan Nicole Dees
Maxwell R Douglas
Vincent Vinh Duong
Tracie Elizabeth Edde
Sara Jermane Edwards
Hana Elizabeth Egawa
Emaa Adel Elrayah
Mattie Ansley Eskew
Virginia Carson Eskew
Johana Sunny Fernandez-Solano
Jared Gregory Frazier
Nicole Renee Fuller
Grayson M Garrette
Mark Adel Gerges
Shanya Hoshyar Ghafour
Kaybrea Joi Griffin
Annah M Griffith
Josh B Griggs
Josue A Gutierrez
Logan C Guy
Yousif M Habeb
Detwan D Hayes
Kayla Nicole Head
Koda Michael Hengstenberg
Maria Elizabeth Hite
Madison Taylor Hopkins
Hannah Rae Hudson
Jessica Clair Hunter
Jolie Nichol Hurley
Marina Sherif Ibrahim
Mark R Isaac
Matthew Robert Johnson
Amal Yasin Kanakrieh
Wesley Hayden Kemp
Safa A Khan
Rina Kunita
Mervana W Labib
Max Alexander Lane
Kortney Lau
Karson E Lewis
Jessica Trainham Litton
Jenny Angely Lopez
Gracie Paige Madison
Elizabeth Marie Mancell
Caroline Grace Manley
Shady Nassef Marzouk
Michael Zackery Massey
Benjamin Noble Matthews
Laine Elizabeth Matthews
Noelle Taylor Mauro
Keven A Melancon
Hannah Elizabeth Melson
Alycia Menchaca
Nikita S Menon
Michael Anthony Mercante
Jacquelyn Jone Meredith
Selfia Sameh Meryal
Houston D Messick
Kirolos Hisham Michael
Abigail Kirsten Miga
Keroles A Mikheil
Gabriella Elizabeth Miller
Miranda Anne Moore
Mary Grace Morgan
Nicolas Kenneth Morgan
Lauren Denise Morris
Jenna Marie Munson
Sydney Elizabeth Myers
Soria Sarwat Neseem
Zachery Lawrence Nolan
Emma L Norrod
Khadija Asayr Nour
Achiro W Oringa
Yamilet Ortiz
Francisco Paniagua Gonzalez
Charmi H Patel
Harshil Patel
Kaytlin Erinn Patterson
Kap Amanda Paull
Kyla Vahn Penick
Chance Matthew Perkins
Jacob David Pickell
Brooklyn Elizabeth Pickle
Ryleigh Nicole Porter
Annamarie C Puglise
Fatima Razzaq
Verina A Rezk
Geovany Riad
Hannah C Ritter
Chessa G Robinson
Jessica Miriam Robles Macias
Isabelle Marie Russell
Issala Mayte Saenphansiri
Justin Warren Sales
Marim H Sameer
Nyia S Sayle
Zackary Russell Schoonover
Makenzie C Sells
Adam Ramzi Shaltaf
Ross Harrison Sibley
Kylie Paige Skaggs
Ahmad Michael Tyrone Smith
Nathan Hunter Smith
Nathan Larry Smith
Haley Nicole Snodgrass
Nicole K Stone
Austin D Suttman
Sophia Marie Taylor
Amy N Tran
Jason C Tuttle
Mya R Vader
Gabrielle P Vinavongso
Trang Kim Vu
Lauren Hailey Walden
Sarah M Walters
Taylor Walters
Meghan Grace Wassom
Devin Edward Weaver
Justin L West
Beshoy Ashraf William
Joshua S Williams
Yordanos Tekeste Williams
Jamiyah A Woods
Hollie P Yokley
Sylvia W Zakher
Yanlan Zheng

COMPUTER SCIENCE

Vivian Imad Aboulmouna
Blake Alan Adkison
Mehmood Ahmed
Christopher David Andrews
Sunny Vanchan Bandavong
James Ryan Bellottie
Johnathan Dylan Bevers
Ayman Ibrahim Boules
David Artee Brugger
Nathan Douglas Byrnes
Tyler Keith Christian
Grayson L Cordell
Joshua W Cox
Jacob Peter Cuomo
Ramin Daneshi
Robert Steven Dew
Biz Francis Duff
Diwas Dulal
Mark Bishoy Eskander
Uriel Esquivel
Matthew Allin Fadler
Colt Bradley Ford
Matthew Stephen Gabriel
Olivia R Gamble
George Micaiah Gannon
Christopher Allen Gerspacher
Aric Ian Gilmack
Kendra L Givens
Ian D Gregory
Caleb Graham Griffy

COLLEGE NEWS

Dean's List for Spring 2021

Laura Guo
Sammi A Hamdan
Kassandra Dale Harner
Scott Jason Hartsell
Iain E Harwood
Rushay Andrea Hays
Bryan Hernandez-Trejo
Nicholas M Hodge
Samuel Gregory Hollingsworth
Si Hong Huang
Malachi Alden Hughes
Jazmin Sanaa Hunter
Andrew M Johnson
Andrew Clayton Jones
Kyle Thomas Jones
Darien Alexander Kidwell
Samual Isaac King
Patrick Hurwitz Kristensen
Evan D Kubick
Alexander James Larabie
Nathaniel James Lathrop
Andrew Logan Lickman
Louis Lizzadro
Jansen Tyler Long
Cody Lee Maness
Christian A Manzur
Joseph Andrew May
Marie Alyson McCord
Anthony Utah McEntire
Sophie Duchesne McIntyre
Trevor Lynn Miles
Zachary Austin Miller
James Paul Mitchell
Ahmad Saleh Mohammad
Emily Faith Musselman
Romario Raeis Nan
Pujan Nepal
Thi Tam Nguyen
Jason G Noble
Pierce Melford Patrick
Sabrina Evelyn Peterson
Derrell J Quartey
Beverly Karen Raudry
Jocelyn G Reid
Rafael Rivera
Kevin Alekzandr Rodriguez
Usman M Saeed
Zernab Saeed
Metan Kamal Salih
Brandon Ricardo Sandoval
Matthew R Schroder
Stewart Lynn Schroer
Ian Nicholas Seal
Clayton A Sewell
Kyrillos K Sharkawy
Sage K Shuster
Gurjeet Singh
Arnold M Slater
Stijn Jelmer Slump
Samuel L Smallman
Nada Srour
Michael Tyler Steele
Chandler Clark Stewart
Cristian Fernando Supelano
Maya Swaminathan
Jodie Talford
Angelo C Tammaro
Roman Enoch Terry
Jordan Alan Treutel
Erica Campbell Truxton
Emily Rose Turner
Jessica Michelle Urban
Treasa E Vallomthail
Tyler K Vongpanya
Samuel A Waymire
Hannah Nicole Williams
Patrick Francis Wolff
Stephanie J Zhang

CONCRETE & CONSTRUCTION MGMT

Maria Francisca Aguilar
Jordan Parker Anderson
Morcos Thabet Ayad
Joe David Bell
Basant Naser Boutros
Logan David Bowers
Ethan Trayce Boyd
Tyler Edward Bozeman
Christian Lee Brann
John Ross Bryan
Kirby M Burgett
Eston W Carlton
Daniel C Carmichael
Jack R Carrier
William J Cole
Matthew Alan Coleman
Ethan Alexander Conrad
Zackaree Ryon Croslin
James Adam Currie
Michael Anthony DiLiello
Corrina R Dodd
Jonathan Connor Durham
Ryan J Earnest
Winston Dee Edgin
Ryan John Elshoff
Omamuyovwi Erhire
Alexander Leon Fairley
Collin O Fall
Nicholas Steven Freed
Antoon K Gabra
Joseph L Gaines
Elizabeth Garcia Pichardo
Tanner Cole Goodman
Zachary Scott Gray
Nicholas James Greene
Marcus Isacc-Paul Greer
Oscar Gutierrez
Robert A Helmke
Luke Michael Herring
Josh Aaron Hester
Gabriel Auden Hirsch
Jake Hunter Hollandsworth
Samuel Joseph Huff
Ronald George Jebavy
Abigail P Jones
Clayton Thomas Karsner
Jordan A King
Zachary Allen Kissinger
Cody Konkle
Jake Callan Linville
Daniel Lee Martin
Samuel Patterson Mathis
Scott Kennedy Messer
Monzer M Mohamed
Alex Patton Moore
Jarrett Andrew Newcomb
Lourdes Nieto
Evan Lee Niles
Angel J Palencia
Alan Eduardo Payan
Chandeya Peace
Caleb Edward Perkins
Judah David Prieskorn
Glenn Mitchell Randolph
Aaron David Rhoads
Aric V Rickman
Adrian Rincon
Will E Roth
Austin T Russell
Adam C Sanders
Hunter N Savely
Bailey Joeseph Sewell
Robert Thomas Sewell
Ethan Sheumaker
Mohap M Siddig
Gregory William Smith
Jared Richard Smith
Jessica M Smith
Keagan Porter Smith
Catherine Anne Steigerwald
Mera A Taneous
Garrett Scott Thrash
Jonathan H Vandiver
Edward J Vanegas
Joshua Dee Wade
Jessop Watts
Shalyn D Willard
William R Wilson
Zoee M Wilson
Owen L Womble
Kaih Nathaniel Yocius

DATA SCIENCE

Sewet Iyassu Ejighu Abai
Abigail Bautista Abuel
John H Albertson
Ryan Douglas Bobrow
Isaiah R Brown
Elizabeth Kathleen Byers
Daniel A Farone
Abdirahman H Gure
Stiven Genady LaVrenov
Mark McGavock Lowe
Colby Jacob Luttrell
Caelan Abigail McCauley
Cayson Rome Seipel
Aurora R Shepherd
Kevin Donald Smalley
Musa Touray
Ryan V Tran
Aaron Vongprachanh

ENGINEERING TECHNOLOGY

Youstina Anwar Abdelsayed
Ayah Eyad Ahmad
Ahmad Alkhiyami
Nezar Mahdi Almuhsin
Jeremiah Kemp Anderson
Miguel Angel
Christopher Nicholas Arnold
Peter Romani Awad
Matitia Thabet Ayad
Simon L Bardes
Lee Barnard
Zani Barnard
Phillip Trevor Barnes
Christopher Tyrese Bishop
Kayla Marie Boles
Ly Thao Bui
Garrett W Bush
John Vincent Cardosi

COLLEGE NEWS

Dean's List for Spring 2021

Sara Katherine Carmichael
Caroline G Caudill
Marvin Lee Davidson
Mary Ziada Dawoud
Nathan Benjamin Deal
Mario A DeAnda
Miles A Deboe
Dakota Richard Deist
Chesity A Douangboupha
Levi Jesse Driver
Ashlee Claire Dunn
Samuel Isaac Dunn
Arsany H Ebrahim
Hunter Logan Engel
Jacob D Fawcett
Ashley Reid Ferrell
Nathan David Fisk
Samuel L French
Daniel Scott Frideczky
Joshua James Gensmer
Erica C Gerardi
Zena S Gerdi
Kerolos M Gerges
Desmond Kory Givens
Donovan T Hall
Daniel Graham Hannett
Gavin M Harris
Jacob Daniel Hendrixson
Anayanci Hernandez Moreno
Wang Ting Hii
Moustafa Howaidy
Tamir Shahir Hussain
Meena Noshy Ibrahim
Robert Graham Jablonka
Kamron David Jay
Allison Mariah Jent
Youssef Wagdy Kamel
John Kakuhihewa Kapu
Kevin Sean Killets
Jiwon Kim
Sangmin Kim
Joseph Cole Kirby
Emily Ann Klunk
Danylo Ivan Kravchenko
Remoon Emad Shaher Labib
Noah Bradley Lance
Robert Lon Latimer
Derek Lee Lipinski
Mena Emil Lotfy
Mena Maher Mabrok
Phillip John MacDonald
Eyad Mohammed A Mahallawi
Basel Hashim Mahmoud
Kirollos Nabil Maximos
Daniel Lee McClain
Marcus Alexander Mednick
Aris Elian Medrano
Austin Riley Meek
Grace N Metri
Kirollos A Mikhail
Emily Renee' Miller
Seefean Medhat Mina
John Michael Minter
Asma Fatima Mohammed
Noah Franklin Moran
Namo W Nadir
Miguel Celerino Najera Vazquez
Yashar Nasiri
Hong-Anh Alexandria Nguyen
Alexander Nathaniel Noreiga
Landon Wyatt Norrod
Brandon Patong Ogden
Parth Ketankumar Patel
Daniel Petit Fajardo
Matthew Douglas Pettey
Awand N Piro
Samuel David Porterfield
Wesley Potts
John F Provost
Estefany Quezada-Segura
Adam Everette Rice
Cody W Ricketts
Lance Dejon Robinson
Jose R Rubio
Kirollos Safwat Sabir
Orrin V Sagman
Nicole Marie Sanders
Molly Kathleen Scott
Timothy M Seidl
Bassam Z Shawky
Rodrigo Sierra
Madison Paige Smith
Warren Houston Smith
William C Staton
Zachary Andrew Staton
Marcus Nabrit Stephens
Nicholas R Stokes
Dax W Timmons
Thomas P Tziahanas
Jaquelin A Villafuerte
Darwin N Visan
Jennifer D Wade
Christian Alexander Warden
Jacob Lee Elrod Williams
Thomas H Wilmore
Bilal Farid Zakaria
Tony Fayez Zakaria
Angel De Jesus Zarate

GEOSCIENCES

Crystal Jennifer Acosta
Carly Suzanne Andrews
Hannah Elizabeth Bates
Samuel Bauer
Dakota Lee Fischer
McKinsey Clare Flanders
Tanner B Ford
Rosalie Gloria Gunger
Eva Valentinova Hardalova
Gabriel A Hosford
Caleb T Johnson
Hailey Marie Keilman
Blake J King
Devin Quinn Lackey
Brooke Elizabeth Lafferty
Kathryn McCanless
Avriel Grace Null
Sean Jackson Oakey
Patrick McGuire Owen
Caitlin A Rolof
Erika Rosenzweig
Lucas Michael Sabin
Benjamyn Savard
Robbie Eileen Savering
Nancye Elizabeth Sovine
Timothy Caleb Trotter
Jenna Gabrielle Voiles
Megan R Wagner
Hunter Reese Waldrep
Kennedy G Wallace
Brandon Reid Watts
Austen Parker Whelan

MATHEMATICAL SCIENCES

Ridha Nawfal Albasri
Jonathan Todd Allen
Katelyn Anne Barfield
Molly Jo Bebelaar
Madison Kincade Berry
Jonathan P Burks
Jarrett Anderson Collier
Ryan Jacob Cox
Mark Andrew Nathan Darling
Arianne Joy Estoque Dayrit
Zachary Owen Delfendahl
Enbo Deng
Nicholas Roswell Dennison
Samuel Clark Dolinger
Nicholas Drainas
Franklin K Eckenrode
Maxwell Nicholas Gardner
William N Garrett
Trevor John Henry
Hector Noel Hernandez
Xinpeng Hua
Cade Asher Jackson
William Allen Jones
Xinrui Li
Zhiyu Liu
Catherine Suzanne Love
Lila T Lumpkin
Isaiah O'Kelly McDaniel
Chloe M Mingus
Tanner James O'Grady
Isaiah Mark Osborne
Haocheng Pan
Zane Martin Reed
Moustafa M Shamdeen
Kaitlyn R Shyblosky
Loren Amelia Usher
Allison Melissa Williams
Morgan E Williams
Kayla Wilson
Tao Zeng
Jialin Zhang

PHYSICS & ASTRONOMY

Ibrahim Abualrob
Landon Ray Arnold
Mena Bushra
Noah Avery Byrge
Tyler A Galligani
Amelia Kansas Givens
Matthew Scott Godwin
Shyanne Nicole Griffith
Bryce L Haven
Andreas Kramer
DaVonte Robert Lewis
Brian Christopher Matthews
Christopher D Meherg
Moussa Mikhail
Steven Daniel Rhodes
Dylan W Riggins
Victor Salazar
Isaac Robert Shirk
Janelle Beatrize Valdez
Carina Noemi Vazquez Nunez
Olivia E Westfall
Sydney Amora Wilson

MIDDLE TENNESSEE STATE UNIVERSITY
COLLEGE OF BASIC AND APPLIED SCIENCES

What's Happening in CBAS?

Medical School Early Acceptance Program (MSEAP)

Application Deadline: Dec. 1, 2021

The College of Basic and Applied Sciences (CBAS) is excited to announce its Medical School Early Acceptance Program (MSEAP) formed by a partnership between Meharry Medical College School of Medicine (MMCSOM) and Middle Tennessee State University (MTSU). The purpose of the program is to increase the number of primary care physicians, while serving the medically underserved populations as well as assisting with alleviating health care disparities in rural Tennessee.

MSEAP is a seven-year early medical acceptance program restricted to incoming freshmen that begins with acceptance into the program as an undergraduate at MTSU and concludes with graduation from Meharry Medical College. The program consists of three years of study in a prescribed undergraduate premedical school curriculum and four years of medical school study. Upon matriculation into the program, students receive conditional acceptance to MMCSOM.

Students must be admitted to MTSU as a first-time freshman no later than Dec. 1, 2021, in order to apply for this program. Link to webpage https://www.mtsu.edu/cbas/MSEAP.php

MEHARRY MEDICAL COLLEGE

COLLEGE OF BASIC AND APPLIED SCIENCES
MIDDLE TENNESSEE STATE UNIVERSITY

COLLEGE NEWS

College of Basic and Applied Sciences

SCI 1020, Box 83

615-898-2613

Bud Fischer, dean

Saeed Foroudastan, assoc. dean

Marlene Lawson, assistant to the dean

Nancy Miller, executive secretary

Jennifer Danylo, advising manager

Eric B. Miller, pre-professional health advising manager

Jared Bryson, director of development

Greg Lewis, instructional technology specialist

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