



ENGINEERING TECHNOLOGY UPDATE

MIDDLE
TENNESSEE
STATE UNIVERSITY

Fall 2021



NEW DEPARTMENT CHAIR: DR. KENNETH CURRIE AN EXCITING VISION FOR THE FUTURE

It's with great pleasure, honor and humility that I write this introduction as the incoming chairperson of the Engineering Technology Department. I am pleased to return to the State of TN where I previously spent 25 years of service conducting manufacturing research at local TN industries such as Saturn (GM – Spring Hill), Schneider Electric, Nissan, The Aerostructures Corporation, and many others.

I am honored to be working with such a highly dedicated and distinguished group of educators, staff, and administrators in the ET department and the College of Basic and Applied Sciences. It is with humility that together we can continue the upward trajectory of our faculty and students as we strive towards relevancy and economic impact. The Mechatronics Engineering and Engineering Technology degree programs will continue to produce students that have the work ethic and new skills to be the most sought after leaders "bar none."

This will require renewed partnerships with our advisory board members, new markets for our graduates, and a complete renewal of our laboratories. These partnerships will be even more important as we begin planning for a new building.

We can't do this alone or in a vacuum—we need your help! We need visionaries, developers, donors, and early adopters. Please consider joining us to make a difference in the lives of our students and the vitality of our industries.

Kenneth Currie, Ph.D., P.E.
Chairperson & Professor (Effective August 1, 2021)

UPDATE: THE CENTER FOR APPLIED ENGINEERING BUILDING

The Engineering Technology Department scored a major victory this past February, when Governor Lee approved our request for a new Applied Engineering Building to be constructed on the MTSU campus. This facility will replace the Voorhies Engineering Technology Complex that has served the department for over 80 years. This building, to be located at the corner of Alumni and Blue Raider Drives and adjacent to the Concrete and Construction Management building under construction, will provide new classrooms, laboratories, tools, research spaces and meeting areas to support both our current engineering and technology programs as well as provide space for the development of new and exciting degree programs.



Next Steps

MTSU Campus Planning department is in the process of selecting an architectural design firm for this project. In September, once the firm is selected, the process of developing the overall design, details and layout of the building will begin. This process will continue through 2022 and is scheduled to be completed by the fall.

We Still Need Your Help

Fundraising to meet the \$2.5M in outside support for this project will continue during the design phase. **This support is vital for this project to move forward.** There are several options available so you can help make this building a reality. Interested individuals and businesses are encouraged to contact the MTSU Development Office at 615-898-2502 to discuss how you can make an investment in the future of your engineering and technology department at MTSU.



INDUSTRY PARTNER FOCUS: AUTOMATION ^{NTH} EXCELLENCE IN AUTOMATION

The MTSU Mechatronics Engineering degree program provides the skills and expertise in industrial automation and robotics driving the current 4th industrial revolution. One of our honored industry partners at the forefront of this revolution is **Automation ^{nth}**, located in Lavergne. Founded in 1999 by entrepreneurs Brent Thomas and Denis Jones, Automation ^{nth} continues its mission to provide world-class automated manufacturing systems and solutions.

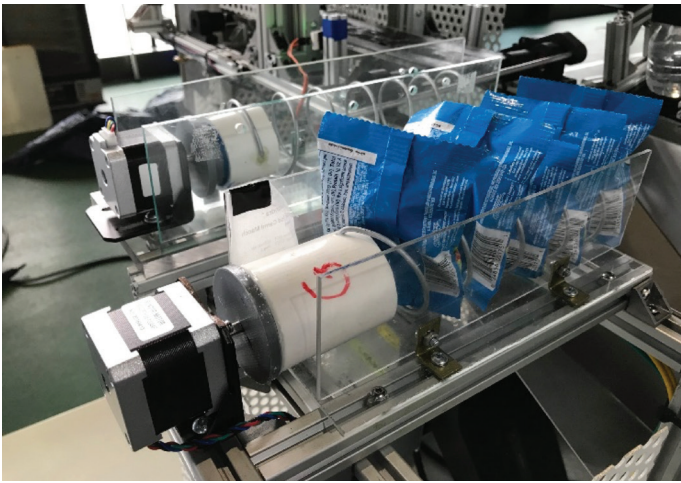
Jeff Buck, V.P of Engineering, finds that “MTSU graduates have been strong contributors here at Automation ^{nth}. The hands-on learning at MTSU with a focus on electrical, mechanical and computer science have produced graduates well prepared for controls or software engineering here Automation ^{NTH}. While we have found outstanding students from many local universities, MTSU graduates are the most prepared for what we do specifically as automation and controls engineers.”

2017 Mechatronics Engineering graduate and controls engineer **Sarah Jost** says of her job at Automation ^{nth} “Controls Engineering is a tightknit community. It is wonderful getting to work with my peers from MTSU who now work for the different companies we serve here at Automation ^{nth}.”

In 2020, Automation ^{nth} was the recipient of **Control Engineering’s System Integrator of the Year** award as well as recognized by **Great Place to Work**, a global authority on workplace culture, as truly a great place to work. Engineering Technology congratulates them on their success and thanks them for their continued support.



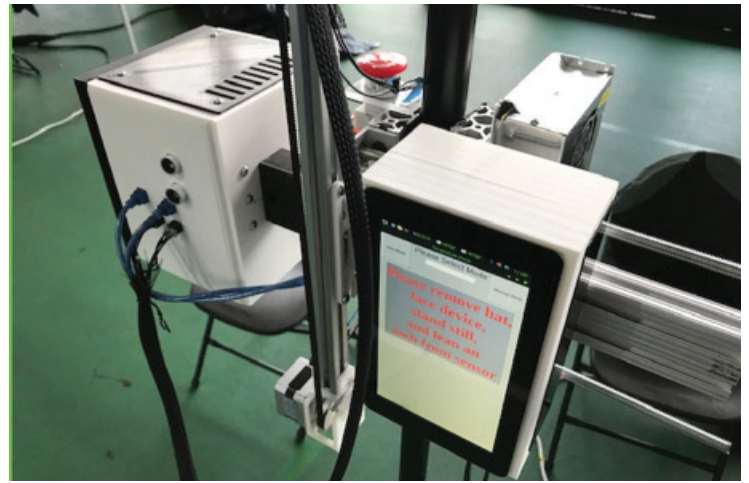
*MTSU Mechatronics Engineering graduates **Melissa Parsons** and **Nicole Arnold** (at robot), are shown configuring custom automation equipment. Photo courtesy Automation ^{nth}.*



MECH-TECH SPRING 2021: APPLIED CREATIVITY

This spring, our **Mech-Tech Student Capstone Project Expo** returned to Murphy Center April 29th, the first in-person event since fall of 2019.

Some of the featured Mechatronics Engineering class projects included: automated greenhouses that provide optimal growing environments, a temperature sensor to detect those who may have COVID, a scaled model of a progressive metal forming tool and an automated food system to dispense a sack lunch. A sampling of Engineering Technology capstone projects included: A self-contained cooling vest utilizing a circulating water system, a portable water quality testing device and a 3D printed motor



NEW FACULTY: DR. JORGE VARGAS

We are pleased to introduce a recent addition to our ET faculty, **Dr. Jorge Vargas**.

Prior to joining MTSU in January 2021, Dr. Vargas worked as an Associate Professor in Electrical Engineering at Florida Polytechnic University. Dr. Vargas earned his Ph.D. in Electrical Engineering from Florida International University in 2005. He brings over 15 years of experience in academia and multi-million-dollar funded projects in RF/Microwave Engineering, Nanotechnology, Superconductivity, and Radar Sensors for Connected and Autonomous Vehicles. His industry background at IBM involved product and process development of RF/Microwave devices

Said Dr. Vargas, "In Engineering Technology, I see opportunities in the Autonomous Systems area, particularly in autonomous vehicles (AVs). Continuing my research, preparing grant proposals, and establishing an Autonomous Systems Center for testing and validation of AV sensors, is my main aspiration here at MTSU."

Dr. Vargas currently serves as the instructor for Digital Circuits Fundamentals, Digital Circuits Design, and Electrical Circuits Analysis I.



ADDITIONAL NEW FACULTY

We also welcome these instructors who are joining Engineering Technology this fall:

Dr. Hongo Zhange, who will be instructing in our Mechatronics program, comes to us from the Department of Computer and Information Sciences at Virginia Military Institute.

Scarlett Murphy will be our CAD instructor in Engineering Technology. Scarlett has previously served as an adjunct professor at Motlow and MTSU and taught in the Mechatronics Program at Oakland High School.

UPCOMING EVENTS

Mech-Tech Senior Capstone Project Expo

December 2. Visit the ET webpage at mtsu.edu/et for location and latest updates!

Engineering Technology Career Fair

September 23. Great opportunity for our students to meet with area employers! 2–5 p.m. James Union Building TN Room

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