



# Engineering Technology (ET) Newsletter

Fall 2022, Spring & Summer 2023 | ISSUE 3

**AP Austin Peay**  
State University  
CLARKSVILLE TENNESSEE

Editor - Professor Ravi Manimaran

## Student Success Stories



**Women in STEM (L to R) - Alyssa Young, Zhariah Walker and Jennifer Stevens**

**Alyssa Young** graduated with a BS degree in Electrical ET and Mechatronics ET in May 2023. After interning with Metalsa for 5 months as an Engineering Co-Op, she was asked to join the team full-time as a Reliability Engineer for the assembly process. Metalsa is an automotive industry producing metallic structures for different vehicles. Alyssa has been actively working on a few projects where she is able to apply her knowledge to help improve certain aspects of the assembly lines. She is currently working on projects to increase productivity and reduce downtimes.

**Zhariah Walker** graduated with a BS degree in Mechatronics ET in December 2022. Upon graduation and after successfully completing the internship program with Hankook, a tire manufacturing company in Clarksville, TN, she was offered a position as a Process Engineer for the Calendaring Department. Her job duties are to develop improvements for the process through

capital investments, investigate material nonconformity, increase production and quality, manage inventory, and conduct monthly forecasts for suppliers.

**Jennifer Stevens** began her four-year journey at APSU, which culminated in her graduation with a B.S. in Engineering Technology in May 2022. One week later, she started a construction management job at CDM Smith in Nashville while simultaneously preparing to pursue a master's degree in civil engineering with an emphasis in construction management at Vanderbilt University. Her story is one of determination, hard work, and perseverance and is a testament to the power of education and how it can change the trajectory of one's life. As a single parent, she returned home to Tennessee in 2018 with the goal of taking care of herself and her daughter while pursuing her dreams of earning a degree in engineering technology.

[Read More>>](#)

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**Robert Moore** graduated in 2023 with a BS in Manufacturing ET. Robert has been offered and accepted a position with LG Electronics USA (LGEUS) in Clarksville, TN as a Research and Design Engineering Associate. LGEUS is a \$48.5 billion global leader and technology innovator in consumer electronics, home appliances and mobile communications.

**Jordan Kublickis** is currently a junior working toward his degree in Manufacturing ET. As part of the STEM Scholars program, Jordan is researching and building a 3D Printed Submersible ROV that is intended to achieve a working depth in excess of 85 meters (~280 feet). Jordan is also a student veteran who served in the United States Marine Corps from 2013 - 2018.



▲ Joshua Eib, Md. Ali Haider ▼ John Blake, Timothy Thompson



ET Faculty, Staff and Award Recipients

## Engineering Technology (ET) Awards Ceremony

On May 4, 2023, the ET Department had an Award Ceremony and recognized twenty graduates from the five concentrations in BS ET and the BS Aviation Science. Eleven graduates were from August and December 2022 and nine graduates from May and August 2023. There were three categories of awards - Outstanding Achievement, Academic Achievement, and Professional Achievement award.



## Scholarly Activities

In Academic Year 2022-23, the ET department faculty's spectacular scholarly efforts resulted in seven paper publications and conference presentations.

(I) On May 18 - 20, 2023, the following paper was published and presented in the 23rd Annual IEEE INTERNATIONAL CONFERENCE ON ELECTRO INFORMATION TECHNOLOGY (eit2023), Lewis University, Romeoville, IL.

Challenges and Future Trends of EEG as a Frontier of Clinical Applications - **Md. Ali Haider, Bijay Guragain**

(II) On June 25-28, 2023, the following six papers were published and presented in the American Society for Engineering Education (ASEE) Conference held in Baltimore, Maryland.

1.) Strategies for Continuous Improvement in ETAC of ABET Programs: A Novel Approach - **Ravi Manimaran, Md. Ali Haider**

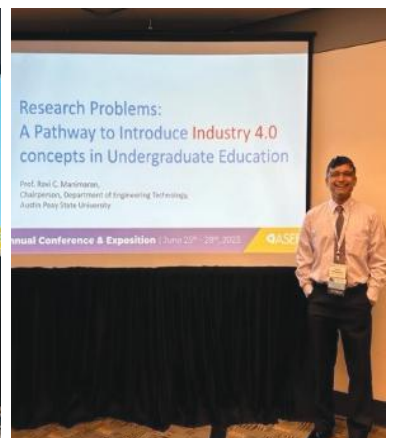
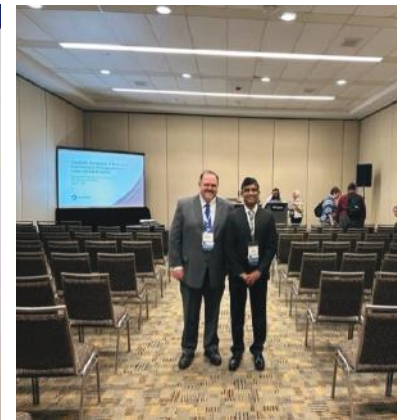
2.) Integration of Professional Publications in the Implementation of Industry 4.0 to Augment the Learning Experience in ETAC of ABET ET Programs - **Ravi Manimaran, Mahesh Pallikonda**

3.) Research Problems: A Pathway to Introduce Industry 4.0 in Undergraduate Education - **Mahesh Pallikonda, Ravi Manimaran**

4.) Building a Rotary Wing Aviation Program to Facilitate Integration of Military Veterans and Service Members - **Charles Weigandt, Mahesh Pallikonda, and Ravi Manimaran**

5.) From Grant to Graduates: The Development of a Regionally Unique Siemens Level 3 Mechatronics Engineering Technology Program - **Matthew Anderson, Alyssa Young**

6.) Experience with a Method Allowing One Instructor to Teach a Course in Two Classrooms Simultaneously at Different Locations - **John Blake**



Row 1— John Blake, Matthew Anderson, and Ravi Manimaran; Row 2— Md. Ali Haider: Ravi Manimaran, Charles Weigandt, Ravi Manimaran

## The Innovation Experience

On April 21, 2023 the second annual Innovation Experience was hosted by the Austin Peay College of STEM. The event was created by Dean Karen Meisch to encourage collaboration between Austin Peay's CoSTEM programs, while also exposing promising students to local leaders in industry. Each program presented teams of students, led by a faculty advisor, who were tasked with solving or researching a particular problem. Their work was then presented, and winners were selected based on their findings and presentations. From Engineering Technology, Prof. Haider's team presented a Smart Cart, Prof. Anderson's team presented a Semi-automatic Wire Cutter and Stripper, Prof. Alberd's team presented a Workcentre for Additive Manufacturing, and Prof. Blake had two teams, one presented on Lab Experiences with Energy and Power Systems for ET and the other team on Bringing the Industry Quality Lab Experience into the ET Curriculum.

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## Aviation Graduates Success Stories

**Sam Nicholas** was one of the first students in the Aviation Science program and the first to complete the BS in Aviation Science. "Safety" Sam continued to work for Austin Peay as a full-time helicopter technician and part-time instructional pilot. Sam has since relocated to Custer, South Dakota, for the next phase of his career. Sam has joined Dakota Rotors as a permanent member of staff, where he does both maintenance and tour flying. He now spends his days flying about the stunning Black Hills and Mount Rushmore, two of the country's most iconic attractions.

**Sean-Michael Horn** received his BS in Aviation Science in December 2022. Sean-Michael is advancing his profession by teaching aspiring pilots at Madisonville Community Technical College in Kentucky. Sean is expanding his understanding of aviation by working for the ratings that will allow him to teach students in both single engine and multi engine aircraft. He is currently working on his goal to be a pilot in emergency medical helicopters.



Sam Nicholas



Sean-Michael Horn



John Alden



Ryan Erb

**John Alden** received his BS in Aviation Science in December 2022. Upon graduation, John has been working in the Aviation science program of the ET department as an instructor pilot. The most recent accomplishment of the program, which was the completion of the training and test for 9 private pilots, was made possible in large due to John's contributions. John plans to achieve his goal of becoming a professional helicopter pilot by expanding his degree of expertise in the aviation field.

**Ryan Erb**, who graduated in December 2022 with a B.S in Aviation Science, has advanced to new levels of expertise since then. Ryan's contribution to the successful completion of the training of APSU's most recent private pilots has been critical. In addition to his full-time job as a firefighter with the Hopkinsville Fire department, the university has offered Ryan a position as an adjunct flight instructor. Ryan was one of the first students to graduate from the aviation science program and was also the first student to fly solo in the Guimbal Cabri G2 while participating in the aviation program. [Read More>>](#)



In May 2023, the Aviation Science program received a 2023 Guimbal Cabri G2 as its most recent aircraft. The new aircraft arrived in St. Louis from France, where it was assembled, certified for flight, and flown by our aviation personnel back to Clarksville. The new Guimbal is equipped with the state-of-the-art avionics system to provide students with the most common systems found in the aviation industry. The Garmin setup is entirely touch screen, with moving maps and synthetic vision, enabling students and instructors to view obstacles and traffic in real time on the screen. The aircraft is currently in use and is expected to receive APSU markings by mid-September, 2023.

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## Aviation Science Program Milestone

In July 17-21, 2023, the Aviation Science program attained a significant milestone by producing nine private pilots. Congratulations to Brian Buckingham, Julian Cisneros, Lynsee Dempsey, Karl Gross, Jeremy Head, Havin Heytvelt, Ray Johnson, Michael Koch, and Brett Smith. A special thanks to Mr. Brian Walker, Designated Pilot Examiner, for his efforts in administering the nine exams.



Nine Private pilots from the Aviation Science Program



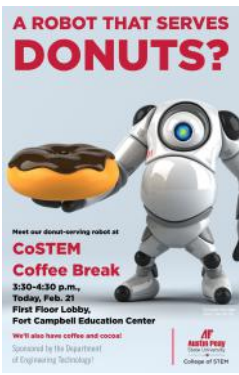
## 3D Printing Workshop

In Summer 2023, the ET department in collaboration with the GIS Center offered a 3D printing workshop for teachers in the regional Clarksville-Montgomery County School System (CMCSS). Seven middle school teachers attended a two-day workshop held in the new Additive Manufacturing Center in the Technology Building, CoSTEM. Organized by Dr. Mike Wilson (GIS Center) and conducted by Prof. Jody Alberd and Mason Cordell (GIS Data Analyst), the teachers learned about 3D Printing processes and methods and how to operate and maintain a typical 3D printer. All workshop participants were provided a 3D printer to take back to their classrooms for their students to learn.



## Robotic Dog

The ET Department has a new “mascot”. Thanks to the support of the College of STEM, Austin Peay has acquired a quadruped robot also known as a “robot dog”. It is intended to give students access to an array of unique learning opportunities through robot programming to perform advanced tasks such as environment mapping and interaction. The robot has been serving as a university “ambassador” providing outreach to several summer camps and workshops in STEM programs. Students interested in working with the robot dog should reach out to Professor Alberd (ET) or Dr. Nicholson (CSIT).



## CoSTEM Coffee

On Feb. 10 and 21, 2023, ET faculty and staff hosted the CoSTEM Coffee in the Technology Building (Clarksville Campus) and the Fort Campbell Education Center. The event featured a Robot serving donuts to students and visitors who participated. The Robot was programmed by the ET students who took a Robotics course under the guidance of Prof. Mahesh Pallikonda.

## Faculty Retirement

After 43 years of service to the engineering technology department, Prof. John Byrd retired at the end of Spring 2023. He played a vital role in launching the aviation science program, creating a satellite program in mechanical engineering technology at Pellissippi State Community College, and modernizing the mechatronics engineering technology degree program to meet Siemens standards. Additionally, John was part of the faculty team that worked tirelessly to achieve the initial ETAC of ABET program accreditation, which was a major achievement for the department.



Professor John Byrd

## Engineering Technology (ET) Department

**RAVI MANIMARAN**  
Professor & Chair

### FACULTY:

Jody Alberd  
Matthew Anderson  
John Blake  
John Byrd  
Md. Ali Haider  
Mahesh Pallikonda  
Charles Weigandt  
(Aviation)

### STAFF:

Timothy Daniel  
(Lab Technician)  
Michele Tamayo  
(Academic Assistant)  
Jerry Gray  
(Director of Aviation  
Maintenance)

### STUDENT WORKERS:

Alyssa Young  
Jackson Peer  
Samuel Sitter  
Elijah Patrick



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**For more information on the Engineering Technology and Aviation Science Programs, email [engineeringtech@apsu.edu](mailto:engineeringtech@apsu.edu)**