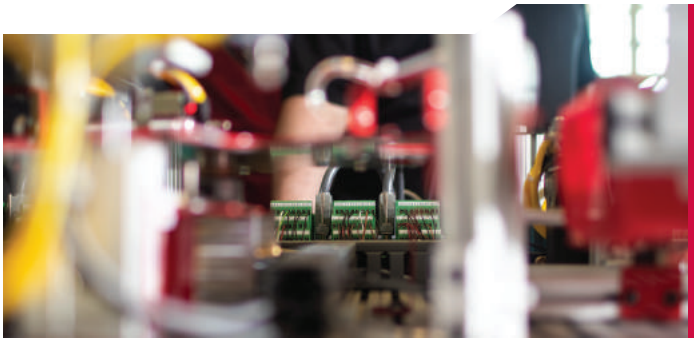


Austin Peay State University
Engineering Technology (ET) Newsletter
SPRING & FALL 2021 | ISSUE 1
Editor - Professor **Ravi Manimaran**

Student Success Stories:

In fall 2021, **Jackson Bass**, a senior in the Engineering Technology BS Mechatronics program, worked as an intern with an "Engineered Fastening company" in Hopkinsville, KY. He has already received a full-time job offer to work as a Manufacturing Engineer upon graduation.

Three Mechatronics students successfully designed, built, and tested a solar panel sun tracker system. The device features linear actuators, an Arduino Uno microcontroller that monitors positioning of the panel to maximize light intensity, and a Wi-Fi connection for real-time updates.

In Fall II 2021 students in the **"Robotics Applications"** course offered at the Fort Campbell location of APSU, learned hands-on programming skills that support the regional industry.

Alyssa Young, recipient of the APSU Presidential Scholarship, is currently a senior with a double-concentration in Mechatronics and Electrical Engineering Technology (ET), with a minor in Music. She is the Vice President of the Technology Leadership Cares (TLC) club, a member of the APSU Honors Program, and currently a student worker in the ET department. Her future goals are to work on research in the prosthetic field, with a focus on the mechanical and electrical aspects.

Alyssa Young

Jennifer Stevens

Alyssa Young and Sara Littlejohn spent their summer working as electrical engineering interns at Nyrstar in Clarksville, TN. They had the opportunity to shadow employees on various tasks, including working on the main electrical one-line to prepare for a major shutdown and writing a manual for a robotic breaker guide used in high-voltage situations.

Jennifer Stevens is a senior at APSU, studying BS in Construction Engineering Technology. Upon graduation in May 2022, she looks forward to starting her career with CDM Smith, a full-service engineering and construction firm. In Fall 2022, she plans to further her education at Vanderbilt University and work toward a Master's degree in Civil Engineering with a concentration in Construction Management.

Capstone Project Presentation:

On Dec. 8, 2021, the BS Engineering Technology Capstone students gave their end-of-term presentations thus ending eight weeks of exceptionally hard work.

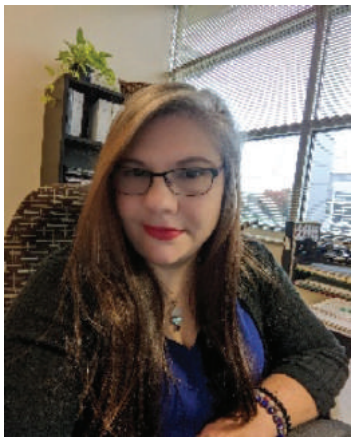
In attendance were Bryan Hay and Alicia Wix of Skanska Construction, Franklin, TN and Prof. George Abert. Congratulations to all!

In this Issue:

Academic Asst. to Dept. Chair

In Nov. 2020, the Engineering Tech. dept. welcomed Michele Tamayo as the new Academic Assistant to the Chair. Prior to coming to APSU, she served as the Board Administrator for the Board of Communication Disorders & Sciences, Tennessee Department of Health. Michele has lived all over the US and abroad as an Army Brat growing up, and later as an Army spouse. She has been a resident of Clarksville with her family since 2000.

Congratulations to **Tim Daniel,** Engineering Technology Lab Technician on receiving his MSET degree in the Summer of 2021.



Michele Tamayo

Tim Daniel

Engineering Technology Faculty

In Fall 2021, Jody Lee Alberd joined the Engineering Technology team as an Instructor. He is an APSU Alumni of the MSET program, a Retired United States Navy Veteran and a Manufacturing Engineer. A lifelong Clarksville resident, Alberd spent the last decade working with regional industries such as Ingersoll-Rand, MSSC, Inc., Commercial Insulating Glass and Electrolux Major Appliances.

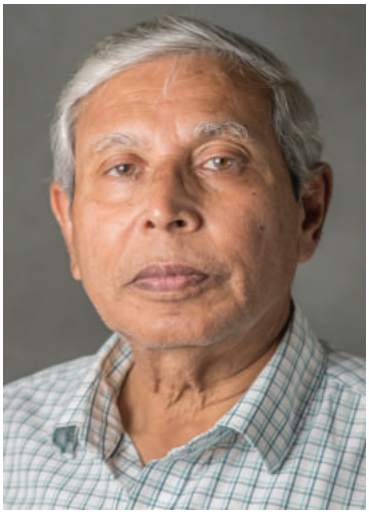
Jody Lee Alberd

Dr. Ali Haider

In Fall 2021, Dr. Md. Ali Haider joined the Engineering Technology team as an Assistant Professor. Dr. Haider received his M.S. and Ph. D. degree in Electrical Engineering from South Dakota State University and University of North Dakota respectively. Prior to joining APSU, Dr. Haider taught and advised senior design projects at the School of Engineering and Technology, Central Michigan University (CMU) from 2018 to 2021. His research interests are Biomedical Signal processing and Brain–computer interface (BCI), including Image Processing, Artificial Intelligence, Machine Learning, and Internet of Things (IoT). Dr. Haider is an author of 15 publications including multiple journal/-conference articles and book chapters.

Faculty Retirements:

The Engineering Tech. dept. extends warm thanks to the following faculty for their years of service to the department, the university, and to our students. We wish them all the best in the future.



Prof. Abu Sarwar
37 years of service; retired May 2020

Prof. Chin-Zue Chen
33 years of service; retired May 2021

Prof. Adel Salama
31 years of service; retired May 2021

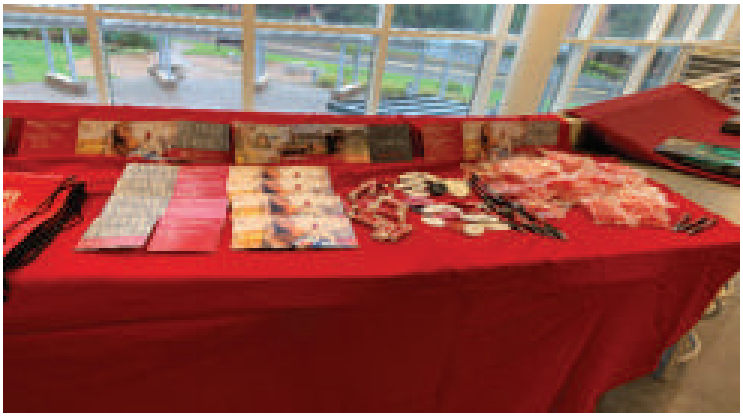
Graduation

During academic Year 2020-21 (fall 2020, spring 2021, and summer 2021), the Engineering Technology (ET) department produced 48 Undergraduates (AAS & BS) and 4 Graduates (MSET). The number of ET undergraduates is 12 % of that from the College of STEM for AY 2020-21.

Professors Ravi Manimaran and Matthew Anderson @ APSU Commencement held on Aug. 6, 2021

ABET Reaccreditation Site Visit:

The ETAC of ABET Reaccreditation Site Visit was held virtually, Jan. 31 – Feb. 1, 2021. The following eight Engineering Technology (ET) concentrations offered by the department are ABET accredited:
AAS in ET– Automotive, Construction and Electronics
BS in ET – Automotive, Construction, Electrical, Manufacturing, and Mechanical.
The BS Mechanical ET is a newly ABET accredited program effective Oct. 1, 2019.

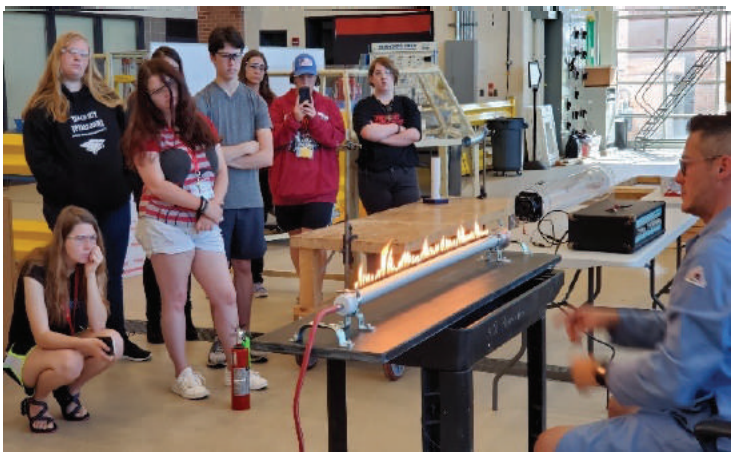


Engineering Technology Table at Recruitment Events – AP Day / Career Night

Grants / Scholarly / Creative Activities:

MTI SUMMER CAMP:

In summer 2021, Prof. Matthew Anderson worked with students from regional schools in the initial offering of the Manufacturing Technology Institute (MTI) Summer Camp. The focus of the camp was to prepare high school juniors and seniors for entry-level employment and provide awareness of future career opportunities. The camp included basic theory and applied knowledge in engineering technology, with OSHA-10 and soft-skills training online. The students received both high school and university level academic credits.



NATIONAL SCIENCE FOUNDATION (NSF) S-STEM GRANT PROPOSAL:

In spring 2021, Prof. Matthew Anderson, Asst. Professor, Engineering Tech. dept. worked on an NSF S-STEM grant proposal that would provide scholarships for academically talented domestic students if funded. The proposal with a total budget of $1.5 million was a collaborative effort in partnership with faculty from the Computer Science and Mathematics departments within CoSTEM. Although the proposal was rejected in its first submission, reviews were positive, and the project team is on track to resubmit in March 2022.

In October 2021, Dr. Md. Ali Haider, Asst. Professor, Engineering Tech. department collaborated with a faculty at Texas Tech University and submitted an NSF grant proposal focused on incorporating active engagement within the research communities and networks in multiple countries including stakeholders and general public. The goal of the project is to bring together diverse disciplinary perspectives as a means of solving unmet research problems focusing on heavily pressing societal needs. This proposal is currently under review by the NSF grant committee.

AMERICAN SOCIETY OF ENGINEERING EDUCATION (ASEE) PEER REVIEW

In Dec. 2021, Prof. Ravi Manimaran, Dept. Chair of ET, was the peer reviewer for three ASEE-SE (2022) Annual Meeting Conference papers. They range in topics such as formation of Aerospace and Rocketry Student Organization, Homemade-Antenna project for an Undergraduate Wave Propagation course in Electrical Engineering, and Implications of obtaining a combined BSE & MSE in 4.5 to 5 years.

TEXTBOOK REVIEW

In Nov. 2021, Prof. Ravi Manimaran served as a member of the review panel and reviewed a new edition of a Textbook in Electrical Engineering and Circuit Theory published by Goodheart-Willcox. The review included an in-depth questionnaire covering all the chapters in the textbook.

JOURNAL PAPER & TEXTBOOK REVIEW

In fall 2021, Dr. Md. Ali Haider reviewed two journal papers and a textbook proposal. The first paper was featured in the Remote Sensing of Environment journal, which publishes on terrestrial, oceanic and atmospheric sensing. The second paper was reviewed for Mehran University Research Journal of Engineering and Technology. Dr. Haider also reviewed a chapter in a new book proposal requested by John Wiley & Sons Ltd ("Wiley"). The book discusses potential approaches to increase the efficiency of energy conversion.

In Spring 2021, APSU purchased its first helicopter, the Guimbal G2 Cabri. It joined the fleet of two Guimbals and two Robinson R-44s that are leased. By owning the aircraft, they will decrease the overhead of the Aviation Science program.

On June 11, 2021 the official APSU Hangar Ribbon Cutting Ceremony was held at APSU's Aviation Science Facility at Clarksville Regional Airport (Outlaw Field). It was officiated by Dean Meisch and APSU President Licari in the presence of many local and state dignitaries.

In August 2019, the Aviation Science program, housed in the Engineering Tech. dept. obtained a provisional flight school operating certificate from the Federal Aviation Administration (FAA). This major milestone proved that APSU had the personnel, equipment, and facilities to operate a safe and capable flight training program along with the curriculum that met the FAA's high standards for flight school certification. APSU demonstrated a first-time pass rate over the FAA mandated 80% for students recommended for FAA Written and Practical tests. On August 31, 2021, the program was awarded full Part 141 certification, a monumental team effort by faculty, staff, and students.

2021 has been a standout year for the Aviation Science Program. The continuing attainment of FAA certificates and ratings is a testament that our student's hard work is paying off. The students enrolled in the B.S. in Aviation Science program have earned seven Private Pilot, Rotorcraft, and Helicopter certificates. Additionally, they have earned five Instrument ratings and four Commercial Pilot certificates.

On Nov. 6, 2021, a STEM student recruitment event was held at the Aviation Science facility at Clarksville Regional Airport (Outlaw Field). Over 60 people attended the event.

Ms. Daisy McKern receiving her Private Pilot Certificate

ENGINEERING TECHNOLOGY (ET) DEPARTMENT

RAVI MANIMARAN
Professor & Chair

FACULTY:
Jody Alberd
Matthew Anderson
John Blake
John Byrd
Cindy Fowinkle (PSCC)
Md. Ali Haider
Charles Weigandt
(Aviation)

STAFF:
Timothy Daniel
(Lab Technician)
Michele Tamayo
(Academic Assistant)
Jerry Gray
(Helicopter Mechanic)

STUDENT WORKERS:
Joseph Plant
Blue Tinsley
Alyssa Young

Austin Peay State University