# MESSENGER

**Tennessee Tech Department of Mechanical Engineering** 

The newsletter for alumni and friends of the Department of Mechanical Engineering | Spring 2024



# A Year of Growth and Vision for the Future

Dear Alumni and Friends:

It's hard to believe another year has passed, and I hope this new year is a happy and healthy one for all of you. Even as we are enjoying a productive and exciting 2024, we want to pause and briefly reflect on a year of significant achievements by Tennessee Tech's Mechanical Engineering Department, especially our advancements in research and academic development. Thanks to the dedication of our faculty, we have secured multi-milliondollar grants from prestigious organizations such as NASA and the Department of Education, demonstrating our commitment to excellence and innovation.

The highlight of this year is our proposal to launch a Bachelor of Science in Nuclear Engineering (BSNE) program in Fall 2024, pending state approval. Aligning with Governor Lee's vision for Tennessee as a leader in nuclear energy, this program is backed by a substantial investment in a nuclear development and manufacturing ecosystem. What sets our BSNE program apart is our collaboration with leading institutions in Tennessee, including Oak Ridge National Laboratory, United Clean Up Oak Ridge, Tennessee Valley Authority and Y-12 Security Complex. With a significant portion of their workforce slated to retire in the next 5-10 years, the demand for new, skilled nuclear engineers is poised to rise dramatically, opening extensive opportunities for our graduates. The employment landscape for nuclear engineers is expansive and diverse, covering sectors such as government, industry and manufacturing. With most job positions requiring a bachelor of science, our graduates will be well positioned to fill these roles, ranging from spent fuel management, small modular reactor design and national safety and security.

As you explore the following pages of our newsletter, I invite you to discover the many inspiring stories and accomplishments of our faculty, students and alumni. These narratives not only reflect the vibrant spirit of our department but also the tangible impact we are making in the field of engineering and beyond. Later this year, we will be excited to open our new engineering building, marking a significant milestone for Tennessee Tech. This state-of-the-art facility, featuring modern research laboratories, student project and shop areas among many other needed resources, and along with cuttingedge amenities, represents our dedication to providing the best possible environment for learning and research. The building's contemporary design and advanced facilities are key to attracting new talent and maintaining our reputation as a leader in engineering education and research.

We extend our heartfelt gratitude to you, our alumni and friends, for your continued support. Your contributions are pivotal in our journey towards achieving national recognition and enhancing our educational offerings. As we step into another year of growth, we remain dedicated to educating future leaders in mechanical engineering and contributing significantly to the field. On behalf of the Mechanical Engineering faculty and staff, we wish you a wonderful 2024!

Warm Regards,

Mohan Rao, Ph.D. Mechanical Engineering Department Chair



## New Nuclear Engineering Degree Program to Launch in Fall 2024

In order to address the demand for nuclear engineers across the country, Tennessee Tech is preparing to enroll incoming freshmen in a new degree, bachelor of science in nuclear engineering, in fall 2024, pending final program approval. Currently, the Tennessee Higher Education Commission is reviewing the plans for the program, which will be housed within the Mechanical Engineering Department. The university expects the plan to be approved by the end of spring, at which time an official release will provide more details about the new program, including the curriculum.

In his 2023 State of the State address, Governor Bill Lee stated "No other state in the country comes close to Tennessee's legacy, resources and potential to be a leader in nuclear energy. And there is no longterm national strategy that doesn't include nuclear energy." Gov. Lee is also proposing the state invest extensively in establishing a nuclear development and manufacturing ecosystem in Tennessee.

Tennessee Tech's program will provide a new pathway for future nuclear engineers to meet the growing demand, as the average age of nuclear engineers is currently over 50 years. Our partners at Oak Ridge National Laboratory, Y-12 and others have enthusiastically embraced plans for the new degree program, hoping our future nuclear engineering graduates can help their increasing workforce need. Tennessee Tech has also formed a new partnership with United Cleanup Oak Ridge (UCOR), which was featured in the August 2023 issue of Nuclear News magazine. UCOR is the Department of Energy's lead environmental cleanup contractor at the Oak Ridge Reservation and this partnership will help build a highly-trained workforce to further UCOR's efforts.

#### **ME Faculty News**

#### New Faculty Join ME Department



**Dr. Daniel Yoon** joined Tennessee Tech as an assistant professor in fall 2023. Prior to that, he was a postdoctoral researcher in the Department of Mechanical Engineering at the University of Nevada at Reno. He received a B.S. in mechanical engineering from Hanyang University, South Korea, in 2006, and a Ph.D. in mechanical engineering from the University of Illinois

at Urbana–Champaign in 2019. He was a simulation and test engineer at Hyundai Motor Company from 2006 to 2013. His area of focus includes mechatronics, autonomous vehicles and aerial robotics. Dr. Yoon's current research interests include estimation, decision-making and cyberphysical systems (CPS). He is particularly interested in decision-making under uncertainties to consider the trade-off between exploration and exploitation.



**Dr. Hiyam Farhat** also joined the faculty in fall 2023 as a lecturer. She received her B.S. and M.S. in mechanical engineering from Wright State University in Ohio in 2005 and 2009, respectively, and then pursued a Ph.D. in mechanical engineering from Roma TRE University in Rome, Italy. She was an adjunct professor at Abu Dhabi University in the United Arab Emirates

(UAE) and has industry experience from serving as an engineering and quality control manager for the Ansaldo Energia Group, as a design engineering at General Electric (GE), and in other professional roles. Her areas of focus include turbomachinery, automotive engineering and quality management systems.

#### **ME Faculty News**

#### Dr. Idem Retires from Distinguished Career at Tech



After 35 years of service to Tennessee Tech University and the ME Department, Dr. Steve Idem retired in July 2023. He earned his B.S. and M.S. in mechanical engineering from the University of Buffalo, and his Ph.D. in mechanical engineering from Purdue University. After working as a design engineer at Bell Aerospace and then a research engineer at Teledyne Laars, Dr. Idem joined the ME faculty here as an assistant professor in 1987; he became an associate professor in 1993, and achieved full professor status in 1998. He earned many honors, including the Kinslow Research Paper Award, the Brown-Henderson Outstanding Engineering Faculty Award, the ASHRAE Technical Paper Award, and the College of Engineering's Teacher-Scholar Award among others. We cannot express how grateful we are for his many years of dedicated teaching and mentoring students, and we wish Dr. Idem all the best as he enjoys this new chapter in life.

If anyone would like to send a congratulatory message to Dr. Idem, please email your note to me@tntech.edu. We'll be happy to pass those along!

#### Anton Named Tennessee Tech Scholar-Mentor Award Winner



Tennessee Tech University named Steven Anton as the recipient of their annual Scholar-Mentor Award for 2023. Anton is an associate professor in the Department of Mechanical Engineering and the director of the Dynamic and Smart Systems Laboratory within the College of Engineering.

"I am very honored to receive this award. It is very meaningful and impactful to be recognized by my peers and colleagues for my work at Tech," Anton said. "I can only do what I do because of the support of my colleagues in the department, the college and throughout the university. I have had the opportunity to interact with faculty and staff members from across the university through my research and my service on various committees, and I look up to many of these people both professionally and personally. They have helped shape me and I'd like to recognize them for their guidance and support."

Anton thanked Steve Canfield for nominating him for the Scholar-Mentor Award and all his colleagues and former students who supported his nomination.

#### ASME Awards Recognize Our Faculty and Staff

Before the holidays, our ASME student chapter asked ME students to vote for an outstanding teacher, mentor, and staff member they worked with during the year. The winners are selected and awards presented at a ceremony after the fall semester ends. For 2023, Dr. Will Brookshear won Outstanding Teacher, Dr. Sally Pardue took the Outstanding Mentor honor, and Mr. Jeff Randolph, the technician over the machine shop in Brown Hall, was presented with the Outstanding Staff plaque.

The ME Department itself recognized a distinguished researcher, Dr. Jiahong (John) Zhu, who was unable to attend the ceremony.



Pictured left to right are ASME award winners Dr. Will Brookshear, Mr. Jeff Randolph and Dr. Sally Pardue.



## ME Faculty Crucial in Tech Setting New Record for Externally Funded Research

Tennessee Tech announced an all-time record for externally funded research in fiscal year 2023, surpassing its previous record by nearly \$13 million and reaffirming Tech's status as a high research activity university. Tech is recognized as an R2 doctoral, high-research activity university by the Carnegie national classification system.

The university secured more than \$36.3 million in external research funding for the fiscal year ending June 30, supported by 167 sponsored research activations that span across Tech's academic departments, colleges and schools. The total represents an increase of more than 50% from 2022 and advances Tech's goal of securing \$40 million in annual externally funded research by 2025.

For the 2023 fiscal year, 38 faculty members obtained funding of more than \$100,000 each and were inducted into the Wings Up 100, a group that recognizes researchers who have more than \$100,000 in external funding in a given year. Four ME faculty were recognized as part of this prestigious group last fall: Dr. Pingen Chen, Dr. Ethan Languri, Dr. Rory Roberts and Dr. Ahmad Vaselbehagh.

Some of these key research projects include a U.S. Department of Energy grant for clean energy research led by ME professors Jiahong (John) Zhu and Ying Zhang, a NASA partnership to explore zero-emission air travel led by associate ME professor Rory Roberts, and an electric vehicle grant secured by associate ME professor Pingen Chen. More about these research projects is included in this newsletter.

"This is a proud moment in the history of Tennessee Tech. With this record-setting total, we are demonstrating the culture of innovation, discovery and academic rigor that has always been part of Tech's story," said Tech President Phil Oldham. "Our rapidly expanding research capacity is the driving force behind Tech's economic impact, which topped \$1.52 billion statewide in the last non-pandemic year. This achievement is only made possible by Tech's dedicated faculty, staff and students. We look forward to celebrating together as a campus community in the days ahead."

Learn more about research at Tech by visiting <u>www.tntech.edu/research</u>.

Dr. Chen Interview

Dr. Languri's Research Interview

Dr. Roberts Interview





ME faculty and student researchers are shown in the university's Propulsion, Power, and Thermal Systems Laboratory which will lead a team of seven additional universities and industry partners in the CarbonLess Electric AviatioN (CLEAN) as part of NASA's University Leadership Initiative program. Left-to-right: Former faculty member Ahmad Vaselbehagh, Ph.D., current faculty member Bruce Jo, Ph.D.; Research Engineer Mingyang Gong, Ph.D.; students, Aaron Bain, Ph.D., Alex Tharpe, David Schafer, Jeff Webster, Jimmy Meacham, Andrew Ellicott, Ph.D., Noah Simpson, Trevor Kramer, Ph.D.; and lead investigator Rory Roberts, Ph.D.

### NASA Taps Tennessee Tech-Led Aerospace Engineering Research Team to Develop Electric-Powered Commercial Aircraft

NASA selected Tennessee Tech mechanical engineering researchers to lead a team of universities and industry partners to help solve one of aviation's key challenges for the future of commercial air travel: zero-emission aircraft by 2050.

With an estimated budget of \$8 million, the CarbonLess Electric AviatioN (CLEAN) project is led by Rory Roberts, Ph.D., professor of mechanical engineering and head of the Propulsion, Power and Thermal Systems Laboratory at Tech. He is joined by two other Tech faculty members, Bruce Jo, Ph.D., associate professor of mechanical engineering and Ahmad Vaselbehagh, Ph.D., a former assistant professor of mechanical engineering. Additional team members include Tennessee State University, The Ohio State University, University of Dayton, University of Washington – Bothell, Boeing Research & Technology, Raytheon Technologies Research Center, and Special Power Sources.

NASA announced the funding under its University Leadership Initiative in the agency's Aeronautics Research Mission Directorate, with funding for up to four years. "The University Leadership Initiative is an integral part of our research portfolio," said Bob Pearce, associate administrator for the Aeronautics Research Mission Directorate at NASA Headquarters in Washington. "The multidisciplinary teams are directly contributing to our priorities and even leading the exploration of solutions beyond our current portfolio."

Roberts pulled together the CLEAN team of university researchers with expertise in the various systems and components needed to start designing an entire aircraft. They will specifically explore a preliminary design for an electrified, 150-passenger aircraft that uses an ammonia-based integrated propulsion, power and thermal management system.

"We're at a point now where we can bring all this research together to design an aircraft, with the goal of bringing it to market one day," Roberts added.

The innovation the team and the University Leadership Initiative will bring to the aerospace industry extends beyond technology to the education of a future workforce, according to NASA.

"This multidisciplinary approach enables the lead teams to partner with others, including student populations who are underrepresented or have not been involved before in aviation research," said Koushik Datta, University Leadership Initiative project manager. "As we look to future growth in Advanced Air Mobility and an increasing emphasis on creating truly sustainable aviation, it's important we involve today's students in helping us solve tomorrow's challenges."

The CLEAN team will directly employ 98 undergraduate and graduate students as researchers across the five universities, with 58 opportunities at Tech alone, according to Roberts. That's good news for Tech undergraduate students, as the aerospace concentration in the mechanical engineering program is rapidly growing.

To learn more about aerospace research at Tennessee Tech and to receive updates on CLEAN, visit the Tennessee Tech Propulsion, Power, and Thermal Systems Laboratory website at <u>https://sites.tntech.edu/ppats/</u>.



Tech's husband and wife duo of Jiahong Zhu (left) and Ying Zhang (right) pictured in front of the VersaMelt gas atomizer used as part of their clean energy research. It is the only equipment of its kind in the state of Tennessee.

#### Zhu and Zhang Awarded \$1 Million Federal Grant for Research on Clean Energy Technologies

Two professors at Tennessee Tech University were recipients of a major grant from the U.S. Department of Energy for their research on clean energy solutions.

Jiahong Zhu, Ph.D., professor of mechanical engineering, and Ying Zhang, Ph.D., professor of mechanical engineering and director for the Center for Manufacturing Research, were awarded \$1 million from the Department of Energy's Office of Fossil Energy and Carbon Management for their work repurposing coal and coal waste to develop low-cost advanced conductors for clean energy technologies.

Zhu and Zhang's research was one of only six projects nationwide selected for funding under the Department of Energy initiative, and the only in Tennessee.

The project, titled "Spray Deposition of Coal-Derived Graphene-Copper Nanocomposites for Advanced Conductors" aims to create better conductors for clean energy technologies that are both affordable and efficient. Working with partners at Tennessee State University, Copperweld, a middle Tennessee-based manufacturer of copper bimetals, and Eastern Plating, an east Tennessee electroplating company, Zhu and Zhang seek to develop new material made from coal-derived graphene and copper that will have better properties than the copper wires and cables currently used in clean energy applications. The new material will be made using a spray deposition process, which is a versatile and cost-effective way to create materials.

Zhu and Zhang will use the project to provide opportunities for students of color, female and veteran students – communities that are historically underrepresented in STEM – to participate in their clean energy research. The research also has the potential to help spur further economic development in rural areas of the state.

This is Zhu and Zhang's second major research collaboration. The duo also received a Department of Energy grant during the previous administration for their research on high-temperature coatings to protect steam turbine blades in coal-fired power plants.

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#### **Tech Draws Region's First Electric Shuttle Bus to Campus**

The first fully electric shuttle vehicle outside of an urban center in Tennessee has landed on the campus of Tennessee Tech, thanks to a team of faculty and graduate students led by Pingen Chen, Ph.D., associate professor of mechanical engineering at Tech.

The shuttle's unveiling is the culmination of a three-year project between Tech and the Upper Cumberland Human Resource Agency (UCHRA), which owns the vehicle, with support from the Tennessee Department of Transportation (TDOT) and the U.S. Department of Transportation's Vehicle Technologies Office.

UCHRA and Tech plan to use the electric shuttle for a variety of uses, including providing on-campus transportation for Tech students, faculty and guests over the coming weeks before eventually transitioning the vehicle for use throughout Cookeville.

Chen says that, at times, supply chain issues and other delays associated with the COVID-19 pandemic threatened the project's completion, but the university and its partners persisted. "We are proud to have the very first electric shuttle bus anywhere outside of a major Tennessee city. Working with UCHRA, we fought through a lot of challenges and, in the end, showed our persistence and resiliency in making it happen," said Chen.

Chen and UCHRA say that, in addition to being more environmentally friendly, riders can expect a quieter travel experience on the electric shuttle bus compared to gaspowered vehicles. The electric shuttle is also projected to have a lower total cost of ownership, which includes not only the up-front purchase cost but also operational and maintenance costs.

The shuttle was outfitted by the California-based Phoenix Motorcars and will be kept outside Foundation Hall, the site of one of two electric vehicle charging stations on campus.

This is the latest in a series of projects led by Tech faculty and students promoting clean energy solutions. In recent weeks, Tech was awarded a grant from NASA for research on zero-emission commercial aircraft, as well as a separate grant from the U.S. Department of Energy for research on repurposing coal and coal waste to develop advanced conductors.



From left: Mark Farley, UCHRA executive director, Lizzy Gaviria, grants analyst for TDEC Office of Energy Programs, Kaitlyn McClanahan, transit manager for TDOT, Holly Montooth, UCHRA transportation director, Pingen Chen, associate professor of mechanical engineering at Tennessee Tech, Riley Sparks, UCHRA fleet operations manager, Jason Carlin, UCHRA fleet operations mechanic, Carl Pinkert, interim vice president for research at Tennessee Tech, Maxavier Lamantia, graduate student research assistant at Tennessee Tech, and Cody Innis, graduate student research assistant at Tennessee Tech.

#### **Student Projects/Student Organizations**

# Tech Engineering Students Design Adjustable Chair for Preschooler with Special Needs

Tech student Ian Sweetin, Tech Child Development Lab teacher Jacquelyn Smith and Tech student Caleb Harman, place Ben into his specially-designed chair.

He may not have been able to say thank you, but his giant smile said enough when Tennessee Tech University engineering students put him in a chair designed just for him.

Ben, a preschooler in the Child Development Lab on Tech's campus, is one of several local children with special needs who benefited this year from the Tech Engineering for Kids (TEK) program. The program matches a child with a specific need to a team of Tech engineering students in Stephen Canfield's kinematics and dynamics of machinery course for mechanical engineering.

"His challenge is with fine motor skills, which means he can't sit in traditional preschool chairs alongside his classmates, so our goal was to design a supportive chair that's height adjustable and can grow with him over the next few years," said Peyton Pope, one of four mechanical engineering students on the design team for the project.

Ben had been sitting strapped into a stroller in the classroom, but it wasn't comfortable for him long-term, and it often kept him seated at a level higher or lower than his classmates.

"We talked with his teachers and caregivers to define Ben's need, but it was up to us to use our engineering knowledge to provide the best solution," Pope said.

They found that Ben needed back and head support, as well as a strap to help keep him upright and not slide down in the seat, so the team of Tech engineering students started by modifying a car seat.

"We could have specially designed the seat portion of his chair, but we found that a modified car seat met his needs in the most economical way," said Ian Sweetin, another student team member.

From there, the team designed a base for the modified car seat to attach to and added legs that can be raised or lowered depending on the table or counter height Ben needs to reach. Wheels with locking mechanisms mean he can be either mobile or stationary and make it easy for his teachers to move him as needed. And of course, the design wouldn't have been complete without some Tech purple and gold flair customized just for Ben.

The greatest challenge of the project was working without predetermined project parameters, said engineering student Caleb Harman.

"When we're working on a theoretical project, the design parameters are provided for us, but not when we're working on a real-life learning scenario. We had to figure that out for ourselves," he said.

Despite that challenge, the team says the course was lifechanging not only for Ben, with the convenience his new chair provides, but for them too.

"Up until now, my engineering classes have been all theoretical. This is the first one I've had where I've been able to apply what I've learned – and it's rewarding to directly see how our work is helping someone else," Sweetin said.

"We don't often get to see the result of our work as engineering students, but this class shows us that our work does have an impact. Instead of just seeing it on paper or on a computer screen, we've had the opportunity to see that our work has been accomplishing something to help someone who needs it," Pope said.

Harman said he's proud to have been a part of this course and this specific project. "I'm proud I was able to apply my knowledge in a way that I could see its practical benefit," he said.

The fourth member of the team, in addition to Harman, Pope and Sweetin, was Jacob Cotten.

Ben was one of more than a dozen children in Middle Tennessee to receive specially engineered equipment from various mechanical engineering teams participating in the course this semester.

"I've been teaching this class now for over 20 years, and while service learning is not a new concept in education, I knew I wanted to focus on kids and provide my students opportunities to develop assistive technology that either doesn't already exist or isn't easily obtained," Canfield said. The class was borne out of a partnership among Tech's colleges of Engineering and Education and the Tennessee Early Intervention System, a partnership which still exists.

Other project partners include Cumberland, Putnam and White County school systems, Cookeville Regional Medical Center, and regional therapy providers. Supporters include Cookeville Bicycles, NAPA Auto Parts of Cookeville and Cookeville Junior Women's Club.

For more about the Tech Engineering for Kids program and to view other Fall 2023 projects, visit the website at <u>https://techengineeringforkids.com</u>. The projects are led by ME Professor Dr. Steve Canfield.

Link to project video: <u>https://youtu.be/eWfoLgK1fAw</u>

Link to News Channel 5 (Nashville) story: <u>https://www.</u> <u>newschannel5.com/news/tennessee-tech-students-design-</u> <u>adjustable-chair-for-preschooler-with-special-needs</u>



From left: Tech student Ian Sweetin, preschool student Ben, and Tech student Caleb Harman.

#### **Baja SAE Shifts into Four-Wheel Drive**

For the 2023 competition season, the Baja SAE team successfully implemented a four-wheel drive system for the first time in team history. They participated in competitions in Oshkosh, Wisconsin and Washougal, Washington (Oregon Competition). The team achieved significant improvements in the static event presentation scores, nearly doubling their scores in those categories compared to previous years! Our Baja team was also the first to correctly complete the SAE rules quiz in Oregon, securing them the best paddock spot for the competition and some competitive advantages. They finished the season with a 7th place endurance finish in Oregon, which was an amazing accomplishment for the team's inaugural four-wheel drive vehicle. The team is already hard at work eagerly building the frame and preparing for the 2024 season, which will include races in Michigan and Pennsylvania. Follow our Baja SAE team on Instagram. @tntechbajasae



The Autonomous Robotics Club (ARC) in our department did an outstanding job of representing Tennessee Tech at the VEX U West Michigan Holiday Tournament last December! VEX U is a college and university competition with over 200 teams competing annually. In the VEX Robotics Competition – Over Under section, ARC achieved a remarkable 7th place among 13 teams and scored six impressive wins in matches between two sets of robot teams. Although they experienced a setback with a malfunction leading to their elimination in the quarterfinals, they dominated the robot skills portion of the event by a substantial margin. Congratulations, ARC!



The Formula SAE team took their car to the streets of Cookeville with a visit to Blue Coast Burrito for an evening of fundraising with an emphasis on FUN. It was also fun for the team members to watch guests react to seeing such a cool race car sitting in the parking lot! Many took the opportunity to say hello, chat with the team and sit in the car for photos.





Last fall also marked the official launch of a new SAE Aero Design team, providing our students, especially those in the aerospace concentration, another way to get hands-on experience as they design, build and compete in this Society of Automotive Engineers' collegiate competition series. Our team participated in the exciting SAE Aero Design East event in Florida to gain a better understanding of competition dynamics and scoring. In addition, the team got to observe other teams and aircrafts constructed in different classes or categories, which helped shape their plans for this year's competition season. They've been diligently at work on preliminary designs and are enthusiastic about being prepared for the SAE event in early March. We'll certainly be cheering them on as they make their inaugural effort!

ME honor society Pi Tau Sigma hosted a very spirited fundraiser last semester, launching their first "Pi a Professor" contest. Ten members of the ME faculty and staff generously volunteered to potentially take a pie to the face, and then students voted for the "winners" by placing money in designated jars in the ME office. The faculty and staff members who received the most contributions were staff member Beth Smith, along with Dr. Will Brookshear and Dr. Andy Pardue, who are pictured here. Pi Tau Sigma organized this fundraiser to raise funds for their participation in the Pi Tau Sigma Annual Convention in February 2024 in Ann Arbor, Michigan.



#### ME Reaches Out to Community, Kindergartners and Beyond

The ME Department is always seeking opportunities to engage with our alumni, the Upper Cumberland community and potential future students of all ages. Community outreach is crucial to attract new students and industry partners, as well as connecting with alumni and friends of the ME Department. We enthusiastically showcased some of our student organizations and degree programs at a variety of area events both on and off campus, reaching thousands of local and regional communities. Below are just a few of the ways we shared the exciting world of mechanical engineering in the summer and fall last year.



The ME Department, along with the Baja SAE and Formula SAE teams, continued to partner with the College of Education for all of the "Kindergarten Goes to College" events. In the fall of 2023, ME had the pleasure of hosting approximately 200 local school children. These young learners were given insights into how our teams design, build and race the cars in competition, as well as discovering exciting opportunities for careers in mechanical engineering.



Putnam County held its inaugural Touch a Truck event at the fairgrounds last summer, and local officials reached out to our renowned Baja SAE team to join in on the fun. We had no idea what to expect, but turnout was beyond what anyone expected. Well over 1000 attendees explored dozens of trucks, heavy equipment, emergency response vehicles and much more. Children and adults lined up to talk to the Baja team members about the cars, and everyone got a chance to get in the car and hear about its design and safety features.



Fall Preview brought a huge crowd of prospective high school students and their guests to campus, and the Mechanical Engineering Department hosted over 200 of those students and parents on a tour of some shops and labs students in our degree programs utilize while here.



ME shined brightly in the 2023 Cookeville-Putnam County Christmas Parade on December 11. Decorated Baja SAE cars rolled down Washington Avenue and Broad Street. Thousands of local residents lined the parade route itself; and approximately 20,000 more watched as it aired live on WCTE, our local PBS station.

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# New Engineering Building Taking Shape

## **Campus Updates**

The construction of the Ashraf Islam Engineering Building has progressed significantly and is scheduled to be completed in fall 2024. This building will directly benefit mechanical engineering students in many ways, and we are excited for this new space to be completed. The mechatronics and measurements labs, currently housed in Brown Hall will move into the building. Additionally, there are dedicated spaces for the vehicle

engineering concentration, senior design project work, as well as new Baja SAE and Formula SAE shops, among others. These images show current views of the main building facing Prescott Hall and the glassed-in annex section near Southwest Hall.





## Peachtree Avenue Becoming a Pedestrian Walkway

Campus continues to change as construction on other projects move forward. As part of the university's master plan to become more pedestrian-friendly, most of Peachtree Avenue from the intersection in front of the Volpe Library to the intersection with Wings Up Way behind Memorial Gym is being transformed into a wide walkway. The entrance to the parking area behind Henderson Hall and the T. J. Farr Building is accessed from 10th Street, which runs in front of Brown Hall. The roundabout in front of Derryberry Hall has been closed to through traffic. This project will be completed this spring.







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CENGD353-PDF-24