



# INDUSTRIAL and SYSTEMS ENGINEERING NEWSLETTER

SPRING 2024



As we come to the end of Spring semester here in the Department of Industrial and Systems Engineering, I take pride in reflecting on all that we have accomplished together.

Our students continue to inspire us all through their hard work and determination. Of the six teams that recently competed in the Tiger Cage Student Business Idea Pitch Competition, three of these teams were made up of Industrial & Systems Engineering students. All three teams placed in the competition and ISE Master of Engineering Management student Holli Michaels won first prize and \$30,000 in startup capital for her physical fitness device, AbGlo.

Five doctoral students represented us well at the recent Graduate Engineering Research Showcase in Huntsville and student Madison Evans placed first in the poster competition for her presentation on Cyber-Physical Security for Manufacturing. The department voted Savannah Chernetsky as 2024 Outstanding Undergraduate Student of the Year. Her impressive resume includes internships at Emory Healthcare, Amazon, and Deloitte.

Working with the Society of Manufacturing Engineers, we have created a joint Auburn/Tuskegee chapter (the first joint chapter of a major university and a Historically Black College or University in the history of SME), offering all of these students more opportunities to collaborate through networking, tours, and professional development.

We expect more than 15 doctoral students to join our program in the fall. At that time, Dr. Sa'd Hamasha, current doctoral graduate program officer, will take a step back to focus on research and Dr. Daniel Silva, associate professor, will take over this role. Additional faculty members are stepping into new roles through promotions. Assistant Professors Dr. Jia (Peter) Liu and Dr. Gregory Purdy have both been promoted to associate professor with tenure, and Dr. Richard Garnett was promoted to senior lecturer.

As we prepare for summer and our exciting study-abroad opportunities for students in Germany and Spain, we look back on this semester with gratitude and excitement for all that is to come.

Please take a moment to read more about our accomplishments below.

War Eagle!

Greg Harris

Industrial and Systems Engineering Professor & Department Chair

---



Auburn University  
initiates AI smart  
manufacturing  
education program  
through NSF grant

Integrating artificial intelligence (AI) into advanced manufacturing has promising potential to revolutionize productivity and generate new jobs in smart manufacturing. Several Auburn University faculty members have recently been awarded a nearly \$200k National Science Foundation (NSF) Rapid Response Research (RAPID) Grant to initiate a career-driven AI educational program for high-school students to prepare them for these opportunities. This project is a collaborative effort between the College of Engineering and the College of Education.

Peter Liu, assistant professor in the Department of Industrial and Systems Engineering; Melody Russell, alumni professor of science education in the Department of Curriculum and Teaching; and Chih-hsuan Wang, professor in the Department of Educational Foundations, Leadership and Technology, have teamed up to develop an innovative AI curriculum for high school students from underserved school districts in the State of Alabama. The curriculum will focus on the integration of artificial intelligence and additive manufacturing content and processes into the science, technology, engineering and mathematics, or STEM, curriculum through a one-week summer camp.

“We can foresee that in the future AI will be a very important tool for the workforce,” Liu said. “We want to teach these students these tools at an early age to solve some of the problems in manufacturing and possibly the future.”



Auburn Engineering team  
creates physical fitness  
device, wins 10th Tiger  
Cage

AbGlo is a physical fitness device that provides sensory feedback to correct lumbar posture during lower back rehabilitation exercises. It's also now among the list of Auburn University's premier student business pitch competition winners.

Resembling an exercise mat, AbGlo contains a flexible sensor that activates lights, vibration and audio feedback and is designed to track the posterior tilt of users, ensuring proper position before strengthening weak muscles around the spine, weak core muscles – effectively treating symptoms of low back pain.

The device impressed industry professional judges enough to win the 10th Tiger Cage Student

Business Pitch Competition on Friday, March 29, which provided six finalists each 20 minutes each to pitch ideas before answering questions industry professional judges.

“AbGlo provides users and health care professionals with instant feedback so everybody can see and feel they are doing the exercises correctly,” said AbGlo co-founder Holli Michaels, an engineering management online graduate student from Santa Barbara, California. “It’s a back rehab tool, first and foremost.”



Hartzell Engine Tech  
elevates  
manufacturing  
practices through  
Tiger Motors training

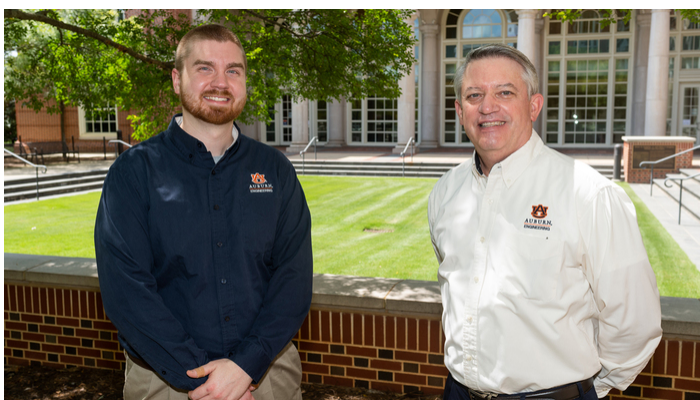
Hartzell Engine Tech, a Montgomery-based supplier of aircraft cabin heating solutions and engine accessories, recently

spent two days participating in lean manufacturing training in Auburn University’s Tiger Motors Lab.

Housed in the Department of Industrial and Systems Engineering, the Tiger Motors Lab, commonly referred to as the Lego Lab, offers experiential learning opportunities with Toyota Production System principles through industry training. The training was led by Tom Devall, director of the lab and auto manufacturing initiatives for the department.

Kimberly Matheson-Nevala, a supply chain project manager for Hartzell, described the training as an enlightening experience.

“Led by knowledgeable instructors, the training provided a deep dive into the principles and practices that have revolutionized manufacturing, with a particular focus on the history and methodologies pioneered by Toyota,” she said.



ICAMS receives  
\$9.2M to further  
Model-Based  
Systems Engineering

Advanced Manufacturing Systems (ICAMS) has once again answered the call from the Department of Defense (DOD).

The \$9.2 million DOD project, "Manufacturing Model-Based Systems Engineering," calls for ICAMS to address the need for more adoption of enhanced digital capabilities in the defense industry. ICAMS will train current and future employees in Manufacturing Model-Based Systems Engineering (M-MBSE) capabilities to maintain workforce competitiveness. Additionally, ICAMS will develop and prototype M-MBSE capabilities with small- and medium-sized manufacturers (SMMs).

There's been an increased request for MBSE approaches, modeling languages, and tools in the development and execution of manufacturing systems, which has given rise to a new field called M-MBSE.

M-MBSE is the intersection of manufacturing and MBSE principles, according to Gregory Purdy, co-principal investigator on the grant and assistant professor in the Department of Industrial and Systems Engineering (ISE).

"Essentially, we are trying to figure out at what point in the life cycle of a manufactured part MBSE tools and approaches overlap," Purdy said. "Based on these overlap areas, we need to develop capabilities and training to support the evolving skillset of workers in this space."



## ISE student honored with leadership award

Gunnar Smith, a junior in the Department of Industrial and Systems Engineering (ISE), was recently honored with the Jeff and Linda Stone Leadership Award. The award recognizes Auburn engineering students who exhibit outstanding leadership in areas beyond engineering.

Maury Gaston, Smith's mentor and a past chairman of the Auburn Alumni Engineering Council, nominated Smith for the award. He said leadership comes naturally to Smith.

"He does the right thing, and he does it with skill, professionalism, character, kindness and grace," Gaston said. "He leads with integrity and by example. He's an inspiration for all those who know him, including me."

---

Auburn Engineering,  
NASA collaborate on  
parts engineering



## program

Through a collaboration that began with the relationship between a former industrial and systems engineering student and a current professor, the Samuel Ginn College of Engineering is teaming up with NASA to educate employees on parts engineering.

John Evans, the Charles D. Miller chair professor of industrial and systems engineering and director of the Thomas Walter Center, was visiting with former student Seth Gordon at the Rose Bowl football game in Pasadena, California, last year. Gordon, a reliability engineer for the NASA Jet Propulsion Laboratory in California, asked if Evans would give a presentation on harsh electrical systems to management at his company.

“During the presentation, they asked how I would design a program to get more education in harsh electrical systems,” Evans said. “They were collaborating with the University of Maryland to create a program, and I suggested the idea of using our online graduate program and creating the program as a collaboration with Auburn and Maryland.”

Shri Agarwal, manager of the NASA Electronic Parts Assurance Group, said workforce development has been an issue across all government agencies, including NASA.



## ISE Alumni Council honors lost member through memorial scholarship

Mason Gaston, a valued member of the Auburn University Department of Industrial and Systems Engineering’s Alumni Council, lost his battle with cancer on Sept. 20. To honor his memory, the ISE Alumni Council has established the Mason Gaston Memorial Scholarship.

Dan Traynor served as council chair when Gaston originally joined in 2021.

“Mason had just moved back to Auburn from Greenville, and he was just so excited to be back in Auburn,” Traynor said. “He was excited to be able to come back and be a part of the Alumni Council.”

After learning of Gaston’s passing, Traynor and current council chair, Debbie Flint, began discussing how the council could honor Gaston. They knew it should be a reflection of Gaston’s love for Auburn.

“We thought a scholarship would be such a great way to honor Mason,” Flint said. “Mason loved Auburn, and this is a way to have his legacy live on in such a meaningful way and keep his memory and love for Auburn alive.”

---



## ISE senior named Undergraduate Student of the Year

Savannah Chernetsky is the 2024 Outstanding Undergraduate Student of the Year for the Department of Industrial and Systems Engineering (ISE). Voted on by the department, the criteria for the award included experience, leadership and involvement.

“I am incredibly honored to receive this award, and I know I could not have done it without the support from my professors and friends,” Chernetsky said. “I am so thankful to have such great classmates who have become some of my closest friends.”

Originally from Suwanee, Georgia, Chernetsky followed in her parents’ footsteps by attending Auburn. She entered as a math major and switched to ISE after a recommendation from a friend.

“I realized there were so many different paths I could take with it, so I joined,” Chernetsky said. “I’ve loved it ever since.”

---



## Student Services Update

The ISE Department ended spring semester with our annual Senior Design competition, which coincided with our spring Alumni Council meeting. This is a wonderful opportunity for alumni to interact with students and offer professional feedback.

The Senior Design class offers students the opportunity to gain real-world industry experience by working with a company to solve a complex problem. Sixteen teams of seniors completed projects for companies that included CARE Humane Society, Workshops Empowerment Inc. and Hyundai.

Debbie Flint, Alumni Council chair, said it is always a pleasure to attend the Senior Design poster sessions.

“This year’s poster sessions did not disappoint as we had a variety of team projects related to manufacturing, healthcare and even baseball,” Flint said. “It is so exciting to see how our students apply what they have learned in the classroom to a real-life opportunity for improvement. It is such a win-win for both the students and the sponsoring organization.”

ISE Undergraduate Student of the Year, Savannah Chernetsky, and ISE Student of the Year nominees were also awarded at the event. Alumni recognized included Ed Lewis, Samuel Ginn College of Engineering’s senior advisor to the dean, as Outstanding Alumni of the Year and Margaret Haack for almost 10 years of service on the Alumni Council.

*If your company is interested in sponsoring a senior design project, email professor [Tom Devall](#).*

---

## CALL FOR *Nominations*

As a valued member of our alumni community, we are reaching out to invite you to take an active role in shaping the future of our department by serving on the Industrial and Systems Engineering Alumni Council. The Alumni Council plays a vital role in fostering connections among alumni, supporting current students, and advancing the mission and goals of our department. The council is currently accepting nominations. For more information about Alumni Council, click [here](#). Application deadline is June 28. Self-nominations are accepted.

[Apply for Alumni Council](#)



**Auburn University Department of Industrial and Systems Engineering**  
Auburn, AL 36849

Phone: (334) 844-4340

Email: [carla@auburn.edu](mailto:carla@auburn.edu)

Share this email:



emma®

Got this as a forward? [Sign up](#) to receive our future emails.

View this email [online](#).

1320 Shelby Center Auburn University  
Auburn, AL | 36849 US

This email was sent to .

*To continue receiving our emails, add us to your address book.*

[Subscribe](#) to our email list.