



VOLUME 6

6

**C**

Carbon  
12.011

2

**He**

Helium  
4.0026

10

**Ne**

Neon  
20.180

74

**W**

Tungsten  
183.84

16

**S**

Sulfur  
32.06

ISSUE 3

MAY 2025

## IN THIS ISSUE

- 2 STELLAR STUDENTS
- 2 REGIONAL CONFERENCE
- 3 RECOGNITION
- 4 UNDERGRAD RESEARCH
- 5 ALUMNA HIGHLIGHT
- 6 SPRING CELEBRATIONS
- 6 OUTREACH
- 7 SPRING GRADUATES

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## VISIT SWALM

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MISSISSIPPI STATE,  
MS 39762



## Girl Scouts Day | Outreach

By Jim Caldwell

On the 25th of January, MSU AIChE started the new semester with Girl Scouts Day, an event designed to help Scouts across Mississippi receive their chemistry badge. The activity is the chapter's largest outreach event every year, putting rooms throughout Swalm to use.



permaking and separation processes. Highlights of the event include demonstrating the cooling properties of dry ice and the Scouts creating their own ice cream during lunch! The event wasn't just a great learning opportunity for the Scouts but also many ChE students! Many members met other students they didn't know, creating lasting bonds.

We're always looking for ways to improve Girl Scouts Day, so if you have any ideas, reach out at [jjc575@msstate.edu](mailto:jjc575@msstate.edu).



AIChE taught Scouts what it's like to be a chemical engineer through many unique hands-on activities, along with a Unit Ops Lab tour. Collaborating with other student organizations such as TAPPI and SPE, Girl Scouts were also shown more specialized fields like pa-







For the past year, MSU's own **Lucie LeBlanc** and **Marian Waltman** have served in national AICHE positions, offering input and advancing the organization's objectives for its student members. LeBlanc served as the Southern Regional Chair and Waltman as a graphic designer for the Publications Subcommittee, both part of the Executive Student Committee (ESC). Both are fifth-year ChE students from Brookhaven, MS headed to New Orleans for full-time positions with Dow Chemical. And yes, before you ask, they are best friends. Read on for their takeaways from their unique experiences.

"As the Southern Regional chair, I updated the contact information for all 33 chapters of the Southern region; after, I would share AICHE updates regarding

## Linked Leaders | *Stellar Students*

national and regional conferences/events. I also organized the President's Meeting for the Southern Regional Conference." Marian explains, "I assisted in creating flyers and infographics for the ESC. These graphics were used on social media, within presentations, and more."

"We submitted our resumes and interests to serve on the ESC. During the application process, we aligned our strengths and weaknesses to the positions for which we felt best qualified, and we answered specific questions regarding the positions before submitting. The process was simple on our end, and the ESC gave us the exciting news that we were selected to serve just two months after our submission."

"We both enjoyed serving on the national committee; it's a way for students to become nationally involved with AICHE. However, it wasn't a huge commitment; if you want to pursue the national level, you should get involved early! Our advice is to serve as a leader within the MSU chapter through the executive board or a committee as a sophomore/junior. After, you can apply for an ESC committee position and then potentially serve on the executive board nationally as senior/fifth year. It's a great opportunity for our stu-

dents! We've mainly learned in this position that the national level takes years of commitment, and we want to encourage our students to take that leap!"

"As graduating seniors, AICHE has been a huge blessing in our life. It's fostered meaningful relationships between us and the faculty, fellow students, the community, and chemical engineers across the US. We even served as the MSU chapter co-presidents for the 2023–24 school year."

LeBlanc and Waltman offer general advice for current ChE students: "Get involved early and stay involved! Each student should spend their fair share of time in the Swalm Student Lounge. It fosters great relationships with the people you will spend your next four to five years with. Our memories from the lounge bring us tears, laughter, and lots of smiles, and we hope the same for you! Know your professors, and understand they are on your team rooting for you even when it feels like they are against you. Always wear maroon on Friday for Dr. Pearson's class, talk to Dr. Elmore when he's in the lounge, go to Dr. Jessop's office hours, and say 'Hi!' to Dr. H. (he's not as scary as you think). We've had a blast in this program and cannot wait to visit and see its growth. Hail State!"

## Tampa Takeaways | *Regional Conference*

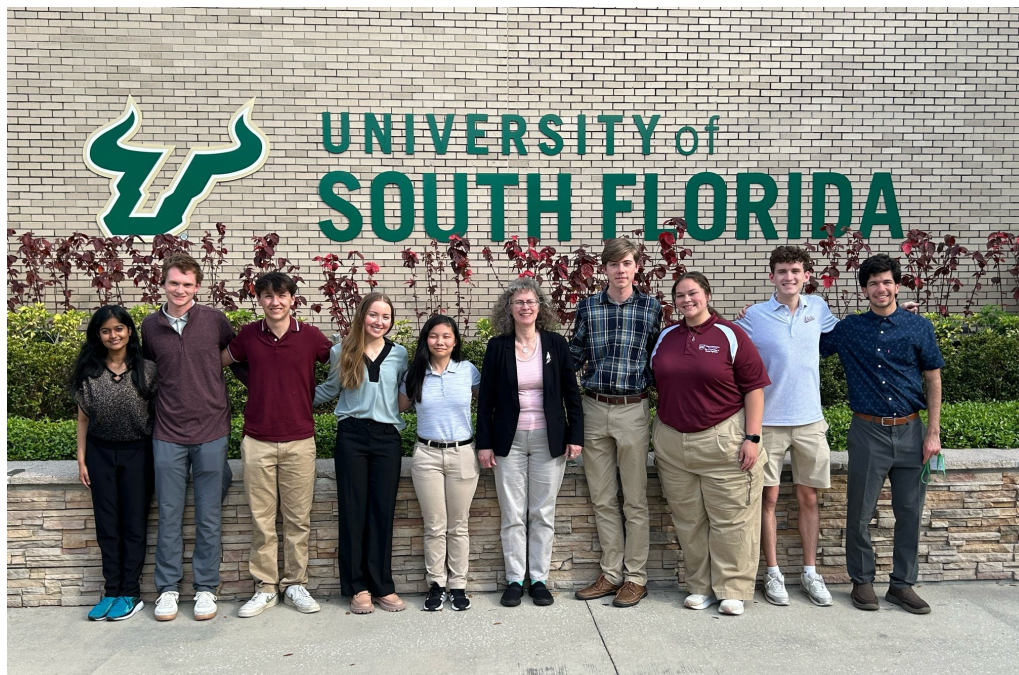
By Josh Bowman

At the end of March, a delegation of nine undergraduate students from the MSU chapter of AICHE and its advisor Dr. Julie Jessop travelled to the University of South Florida in Tampa for the Southern Regional Student Conference. Attendees engaged in competition and professional development events and interacted with ChE students from across the South.

Kicking off the weekend was the beloved ChemE Jeopardy competition where students answer questions drawn from ChE courses, industry practice, and general knowledge in a team trivia-style competition. Contestant **Thomas Turner** offers, "As a freshman, I often felt a bit in over my head, but it was a fantastic opportunity to revisit material and learn something new while thinking fast on my feet and working as a team."







MSU AICHE Delegation, from left: Shreenithi Lakshminarayanan, Thomas Thurner, Jim Caldwell, Avery Byars, Catherine Boltz, Dr. Julie Jessop, Josh Bowman, Victoria Taylor, Jacob Odom, and Vitor Da Silva

MSU's team, which also included **Josh Bowman**, **Shreenithi Lakshminarayanan**, and **Vitor Da Silva**, advanced to the semifinals where they alone correctly answered the Final Jeopardy question on boundary layer theory. Thurner continues, "We were confronted with questions relating to everything ChE—mass

and energy balances, kinetics, process design, organic chemistry, thermodynamics, and more—as well as wildcard topics like American history, solar engineering, and Pokémon! Overall, the trip was a lot of fun and a great experience!"

Friday night's exploits included a design challenge social—a meet-and-greet take

on the classic egg drop challenge—and Saturday morning was a great opportunity to network and learn about how MSU can reform its Chem-E-Car Competition team. Other unique events included a candle-making workshop, attended by **Catherine Boltz**. She recounts, "It was really fun, relaxing, and pretty simple. We put our wick to the bottom, melted the colored wax beads, added scented oils, and then the melted candle wax. After mixing everything, volunteers kept our candles for the wax to harden. I was left with a beautiful white citrus candle; I'm happy I got to make something to be able to take home from the conference!"

The conference concluded with a closing ceremony and address by keynote speaker Patrick Kane, the VP of Environmental Health & Safety at the Mosaic Company who spoke on the importance of the human element in industry.

Look out for ways to get involved ahead of the 2025 Annual AICHE Student Conference. Similar offerings, the opportunity to present research, and more are available in Boston this November!

## Swalm Stars Saluted | Recognition

On March 21, the Bagley College of Engineering hosted its annual Distinguished Engineering Recognition Banquet. Among its honorees, two Swalm alumni were recognized as Distinguished Fellows.

Now the CEO of Denbury, **Kathleen Ash's** (ChE '06) career at ExxonMobil spans senior roles in operations, finance, and safety. She serves on the Swalm Advisory Board and Dean's Advisory Council, promoting the energy industry and education through the John & Kathleen Ash Excellence Fund. See our [summer issue's alumna highlight](#) for more on Ash.

**Jeffrey M. Noe** (PTE '79) spent over four decades in the oil and gas industry, holding key roles at Mobil, Saudi Aramco, and Shell, where he served as Global Principal Technical Expert for Hydraulic Fracturing. Now retired, Noe credits his MSU education for opening



global opportunities and recently returned to MS with his wife, Jane, after years of travel and work abroad.

Congratulations Mrs. Ash & Mr. Noe!



## AIChE's Anniversary!

The MSU AIChE student chapter was chartered in 1957, and it's won the Outstanding Student Chapter Award 22 times in the past 24 years. We're planning a platinum celebration in 2027, so please send us your AIChE photos and memories: [jessop@che.msstate.edu](mailto:jessop@che.msstate.edu). Thank you your part in building its legacy!



## ChEs in History

**Trevor Kletz** was a pioneering British ChE who transformed modern industrial safety by championing the concept of "inherent safety"—designing processes to eliminate rather than merely control hazards. Through his writings, including the seminal *What Went Wrong?*, and his advocacy for hazard and operability studies, Kletz reshaped how engineers approach accident prevention.

## From Lignin to Lightning | Undergraduate Research - John Bush

In the summer of 2024, I conducted undergraduate research in the Sustainable Bioproducts Department at Mississippi State University, focusing on the development of lignin-based batteries as a sustainable alternative energy source. This experience provided me valuable insights into how researchers design more environmentally friendly energy storage devices.

My research focused on the synthesis and application of lignin-based batteries, which utilize pure carbon derived from lignin to create high-performance energy storage devices. Observing the transformation of lignin into a functional electrode material was a highlight of the project, I thought it was fascinating to see lignin develop from

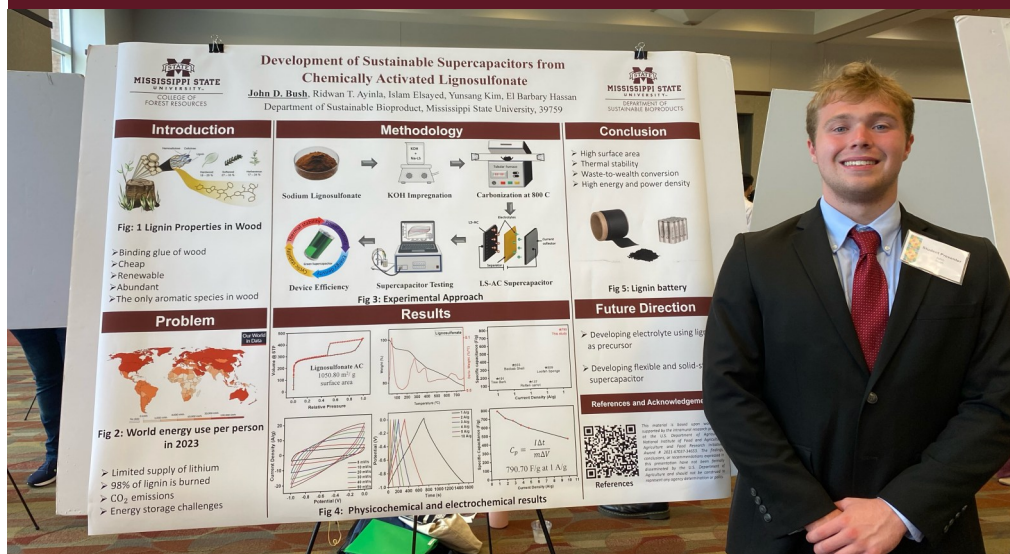
having minimal to large electric potential. I always had a passion for energy when I was a child such as having a snap circuit, but this allowed me to apply that passion in the real world.

These batteries are helpful as they align with broader efforts in the scientific community to explore lignin-based batteries as global energy demand continues to rise. Lignin-based batteries offer a solution, as they are not only highly effective but also environmentally benign, leveraging a renewable resource to reduce the ecological footprint of energy storage.

I am driven by my passion for technological innovation and the role of competition in driving progress. Over the past century, technology has advanced

at a historically fast rate, and I am eager to contribute to this trajectory by developing sustainable energy solutions. Lignin-based batteries hold significant potential to meet the growing demand for efficient, eco-friendly energy storage, and I am motivated to further this field through continued research and development.

Participating in undergraduate research has also provided me with a glimpse into the rigors of graduate-level study and the opportunity to present my findings to faculty and peers. For students interested in pursuing similar opportunities, I recommend applying for research programs, connecting with MSU's career center, and reaching out to professors, upperclassmen, or graduate students for guidance and mentorship. Engaging in undergraduate research not only enhances technical skills but also fosters a deeper understanding of the scientific process and its impact on real-world challenges.



## Corny Corner

How long does it take to sail 220 yards at 1 nautical mile per hour? See page 6.

## Bonnie Chapman ('96) | *Alumna Highlight*

By Josh Bowman

From plant design at Albemarle to leading sustainability efforts at Ergon, Inc., Mrs. Bonnie Chapman has built a career inspired by a lifelong belief in getting in the “short line.” A third-generation Bulldog, Chapman viewed MSU as a natural stage on her path and along with ChE, managed 18 hours of business coursework. Beyond classes, she gained leadership experience through the Baptist Student Union and served as an Engineering Ambassador: “[We] often hosted alumni, gaining insights in various industries. These interactions gave me confidence in communication skills I still use today.” Geographically diverse summer internships in environmental consulting, lithium chemicals, and mergers/acquisitions reinforced classroom lessons along with a mission to Vancouver.

Upon graduation, Chapman began as a process design engineer at Albemarle in Baton Rouge having later projects in Texas, South Carolina, and Jordan. “I knew I would end up on the commercial side. I was a ‘textbook’ engineer in college, easily solving problems and equations, but never with the mechanical ‘knack’ to work long term in a plant, so there was irony taking a design job.” Completing her MBA sparked a pivot into other fields like product management, sales, and operations. But missing extended family, she eventually joined Ergon and returned home to MS with her husband Jim (another MSU ChE). Advancing through business and plan-

ning roles, she now provides expertise and guidance on evolving regulatory standards as the Vice President of Product Stewardship. This role allows her to focus on global sustainability efforts: “[They] continue to evolve, meaning my job is not always well defined. However, few times in your career can you build something from scratch; every day I work with outstanding individuals to accomplish Ergon’s Doing Right strategy to meet these sustainability goals. Getting to encourage our employees and units to continue building on that honorable foundation is extremely rewarding.” Chapman credits her ChE background for the oil and gas insight, analytical problem-solving, and flexibility she continues to employ.

As advice, Chapman recounts, “My dad said two things to me growing up. The first was ‘You can play now and pay later, or you can pay now and play later,’ clearly applicable to ChE students. The play comes later when you enjoy the benefits of a successful career. The second was ‘Get in the short line.’ Take the task or opportunity that no one else wants—too difficult, time-consuming, or unknown. By getting in the short line, you set yourself apart and demonstrate your skills. For me, the ‘short line’ has opened new areas of personal and professional growth.” She also emphasizes listening and asking questions: “Your facility’s operators may not have an engineering degree, but they likely have experience that can build your skill set if you



seek their input.” She reassures students that MSU prepares them well, “Be patient—MSU engineers are practical, analytical, and hardworking. You are capable of any task set before you if you strive to continue learning.” She also stresses effective communication, teamwork, and a mindset of safety and support of others. For more wisdom, she recommends *Switch: How to Change Things When Change is Hard*.

Chapman has served on the ChE advisory board for over 20 years—a body integral to recent facility and potential curriculum updates—and loves interacting with students. She also champions Ergon’s sponsorship of Bagley’s Summer Bridge program. Chapman exhorts, “Giving back could mean encouraging a local student, sharing your experience, or yes, offering financial support. We were blessed by alumni before us—bless those behind us.”

Thank you, Mrs. Chapman!

### Alumni Engagement Opportunities

The Swalm School is proud of its graduates! You are inspirations to current students, and there are opportunities to continue engagement.

Keep us abreast of your latest accom-

plishments for the newsletter, website, and social media.

Volunteer to give a professional development seminar for CHE 3331. Recent presentations include Networking, Lifelong Learning, Global Cultural Awareness, Handling Pivot Points in Your Career, Being the Ideal Team

Player, and Communication Skills.

Participate in the Swalm alumni mentoring program. Mentors contribute to the professional preparation of their mentees by interactively sharing their knowledge, experience, and counsel.

Those interested can email Dr. Julie Jessop at [jessop@che.msstate.edu](mailto:jessop@che.msstate.edu).



## ChE Senior Banquet & Crawfish Boil Snapshots



## Bedtime Boards | Outreach

The [Bedz-4-Kidz](#) program organized by the Golden Triangle Dream Center has provided nearly 2,000 bedframes, mattresses, pillows, and bedding for children without a bed of their own. On Saturday mornings throughout the year, humid or icy, MSU AIChE members join in sanding boards, drilling bolt holes, assembling headboards, etc.—often preparing nearly 60 beds during each build. Volunteers then install them in assessed homes. The program estimates that 6,000 children in the area still need their own beds. No prior experience is needed to help out; there are upcoming builds on 5/3, 5/24, 6/7, and 6/21! Thank you to our volunteers!



Front and back  
cover photos by  
Greg Brooks

**Corny Corner**  
Knot-furlong.

**AIChE**  
The Global Home of Chemical Engineers





# Congratulations to our Spring 2025 ChE Graduates!

Kathleen Abadie AΩ

John Ables Ω

David Ansley

Alexa Aubrey AΩ

Colin Barnett AΩ

Arie Baumgarten Ω

Justin Black

Caroline Boltz AΩ

Catherine Boltz AΩ

Grant Borgognoni AΩ

Mary Brewer Ω

Ethan Brown AΩ

Ethan Bryan Ω

Andrew Bryant Ω

Jack Cappel

Cannon Clark AΩ

Asiah Clay Ω

Zacharie Collins

Destiny Cox Ω

Ian Crosby

Rachel Dalessandro A

Emily Dalton AΩ

Irvin Dement

Savana Duke A

Miller French Ω

Jordan Gabriel Ω

Nicholas Gardner AΩ

Elise Hardwick A

Anna-Claire Herring AΩ

Johnny Hicks

Chloe Hollingsworth AΩ

Laban Hunt AΩ

David Johnson

Nathan Keen AΩ

Karan Khambhati

Jaecob Kim AΩ

AJ Kyser AΩ

Lucie LeBlanc AΩ

Colton Lott A

Madeline Majure A

Brandi McDonald Ω

Timothy Miller Ω

Taylor Misiolek AΩ

Chloe Puckett Ω

Benjamin Roberts A

Sarah Robinson A

Sydney Salter AΩ

Sony Severin AΩ

Paige Shedd AΩ

Jordan Shelton A

Chloe Shivers AΩ

William Shy

Garrett Simmerman AΩ

Jackson Smith Ω

Tevia Smith

William Spence

Christian Spencer

Benedek Szabo AΩ

Victoria Taylor AΩ

Andrew Walley

Marian Waltman AΩ

McCaylee Whitehorn Ω

Justin Whittington

Niki Ye AΩ

A - AICHe

Ω - ΩXE

**Thanks to everyone** who contributed to making this issue a success! Look for the next issue this August.

**Josh Bowman, Newsletter Editor**

**Corny Corner Suggestions?**

We'd love to hear them. Email Dr. Bill Elmore at [elmore@che.msstate.edu](mailto:elmore@che.msstate.edu).

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