

Annual Student Conference Report

by Nathan Keen



Catherine Boltz wrote: "I wanted to attend this session because I was curious to hear some advice from people who have stayed active in AIChE during their professional career. This was a meeting where four board members answered questions from the audience. These questions ranged from 'How do you balance career with family?' to 'What is the project you're most proud of?' However, there were a few questions that really stuck with me, one of which was 'How do you stay positive facing adversity and challenges?' Some of the simple answers included surrounding yourself with good people

and to make sure to set aside time for yourself, but the answer that stood out was to stay rooted in who you are. This advice is so important especially when you're going through changes and difficult times. Remembering who you are and what your morals are can help you make the best decisions. Another question that I thought was interesting was 'Is there anything you regret during your career?' One of the board members took an internship that paid more but did not enjoy it at all. Their advice was that money is not everything and to follow your passion instead. Overall, the advice boiled down to staying true to who you are, taking the initiative to go after opportunities, and to do what you love."

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TO STAY INFORMED:

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The AIChE chapter at Mississippi State sent a delegation of 11 student members to the Annual Student Conference (ASC) in Orlando this November. Attendees participated in networking events with other chemical engineering students and leaders, learned from topical breakout sessions, and engaged in various competitions.

Town Hall with AIChE Leadership

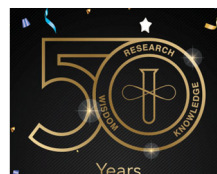
The most-attended session by members of MSU's group was a Q&A with current leaders of AIChE, who offered practical advice on post-graduate AIChE involvement and establishing yourself in the workforce. Here are a couple of summaries from our student delegates:

NOBCChE Chapter at MSU

The National Organization for the Professional Advancement of Black Chemists & Chemical Engineers (NOBCChE) celebrated its 50th anniversary at the Annual Conference in New Orleans this September. **Lillian Knight** and **Asiah Clay**, both chemical engineering undergraduates, attended the meeting to receive the certificate of charter membership on behalf of Mississippi State's

NOBCChE student chapter.

For more details about NOBCChE at Mississippi State, check out its website: <https://www.che.msstate.edu/nobccche>. Also, watch for a feature article in the upcoming spring newsletter.



Clay (L) and Knight (R) at the NOBCChE awards gala

Learning Curve: *How I Transitioned from School to Work*

by Clayton Dickerson



Alumni Spotlight:
Clayton
Dickerson ('21)

Key Involvement

- Guest speaker
for CHE 3331
Professional
Development
Seminar
- Career Fair
recruiter

Greetings to my fellow Dave C. Swalm School of Chemical Engineering alumni and current students! As a member of the ChE Class of 2021, I'm glad to share my experience transitioning from full-time student to full-time Process Engineer in the refining industry.

Most of my career as an engineer has been with Ergon in one way or another. I was lucky enough to start my co-op experience with them the summer semester after my freshman year at MSU as a process engineering co-op at their biofuels facility that produced ethanol. After rotating through a few different business units as a co-op, I graduated and started my full-time career at Ergon Refining in Vicksburg, MS. From there, my area of responsibility has been through all our unit operations and now as the site lead process engineer for capital projects. My journey from the classroom to industry has been filled with challenges and rewarding experiences, and I'm excited to offer guidance to my fellow Bulldogs on making this transition successful.

For many young engineers like me, stepping into the role of a process engineer at an oil refinery is a monumental shift from theoretical knowledge to practical application. It demands adaptability and a thirst for continuous learning. Transitioning from textbooks to real-world scenarios requires staying updated with indus-

try trends and advancements, as the field of chemical engineering is ever-evolving. Unfortunately, there is simply not enough time to cover all the topics and tools you may encounter in industry during undergrad.

Embracing this transition requires a shift in mindset. Understanding the practical application of engineering principles while acknowledging the constraints of the industry is crucial. Often the best solution for the company may not be the technically "best" solution after all factors have been considered. Procurement schedule, end-user buy in, and utilizing off-the-shelf components can often create more value for the company than optimizing a design to the nth degree if that work comes at the expense of these factors. It's the engineer's responsibility to understand where "good enough" is acceptable and what requires detailed attention. This knowledge primarily comes with experience but can be learned by careful attention to the decisions made by those more experienced than you. I think that the books authored by Norman Lieberman offer a great example of this and are worth reading by any young process engineer. I suggest starting with *A Working Guide to Process Equipment* if you are interested.

My experiences at Ergon Refining have emphasized the importance of effective communication and teamwork. Collaborating with multidisciplinary teams and building strong relationships

within the workplace are pivotal for success. A book recommendation here is ASME's *Unwritten Laws of Engineering*, a read less than 100 pages that gives age-old tips for navigating an engineering workplace.

Navigating this shift from student to professional engineer demands patience and perseverance. Throughout my journey, I've found seeking mentorship and guidance to be immensely beneficial. Leveraging internships and co-op programs during college provided me with invaluable hands-on experience and prepared me for the realities of the professional world.

To my fellow students and recent graduates, maintaining a positive attitude and embracing challenges as opportunities for growth is essential. Stay passionate, remain curious, and be resilient throughout this journey. Remember, the transition may be challenging, but it's also incredibly rewarding.

CORNY CORNER

Which chemical species were scientists not expecting to discover?

Skate Odyssey

K–8 Outreach Event is a Student Favorite

by Nathan Keen

Members of AIChE participated in the annual Skate Odyssey outreach event for students in grades K-8 this October. About 75 children attended and learned through STEM-related projects and demonstrations.

This event consistently has the largest participation among students members of AIChE, due in part to its interactive nature. Students attended a training session in which they received instruction on the scientific principles being taught and the practical considerations of each demonstration before leading the children.



AIChE student members with elementary school children at the Skate Odyssey outreach event

Students met for the event at the local roller skating rink on the afternoon before Halloween this year. This timing brought a couple of new opportunities for spooky-themed elements. Senior **Lucie LeBlanc** said she enjoyed having the outreach event near Halloween because many students

chose to dress in costumes to celebrate and add to the fun.

One of the experiments involved making a “ghost” by adding baking soda to a water bottle and then capturing the evolved gas in a white balloon. The children were also taught to make slime, which is always a crowd favorite.

While it may look slightly different each year, the Skate Odyssey STEM outreach event is something many students in our AIChE chapter will be looking forward to in the future. We are excited to continue this partnership with the community, facilitating learning for students of all ages and fostering an increased interest in the science and engineering fields.



*ChE sophomores **Katelyn Wilson** (L) and **Avery Byars** (R) lead students in making their “ghost” from baking soda and water.*

Award-Winning Students

Asiah Clay was awarded an AIChE Minority Affairs Community Scholarship.

Each year, 10–20 students nationwide are given this honor for their exemplary performance as members of an under-represented group in chemical engineering. This is the 5th such award earned by a Mississippi State student in the past 8 years.



Courtney Cochran received the 2023 Harry Charles F. Simrall Award for

Engineering Excellence from MSU’s Association of Retired Faculty. The Bagley College of Engineering faculty selects the outstanding engineering student to whom the award is presented each year. Selection criteria includes academic performance, leadership, and service.



Shreenithi Lakshminarayanan brought home a 2023 Donald F. and Mildred Topp Othmer Scholarship Award.

Awards are presented to 15 AIChE student members across the nation on the basis of outstanding academic achievement and involvement in student chapter activities.



Conference (cont. from Page 1)

Niki Ye added: “In this session, conference members were able to ask a panel of AIChE directors, the president elect, and the current president about their experiences in leadership and advice that they have for current undergraduate students. I personally enjoy the leadership Q&A panels with current or past professions in leadership positions because on the occasions where there are people of color, I try to make the time to hear their stories of establishing themselves professionally. This year, the focus of the panel was focused on post-undergraduate career planning, and I gained a lot of perspective about how to approach choosing and asserting my career path. The panelists also encouraged to give back to the community and share your stories and experiences with peers because those connections are what makes AIChE more accessible. There was a strong emphasis on creating a network around yourself and to not be passive in your work life.”

Other sessions of interest included many with an eye toward post-graduate endeavors.

Blue Ribbon Winners

Finnis Ginder – 1st place poster, Materials Engineering & Science Division 11. “X-Ray Vision: Seeing the Impact of Monomer and Initiator Chemistry on Conversion in X-Ray Polymerization Systems.”

MSU student chapter – 1st place, AIChE K-12 STEM Outreach Competition, Grades 6-8 Division. “Illuminating Reactive Principles Behind Gel Nail Polish.”

The important points from a couple of those discussions are summarized below:

Innovations in Materials and Pharmaceutical Engineering

Laban Hunt shared: “Engineering in the pharmaceutical and material industries is a widely growing concept throughout the world. Flow chemistry is used in these methods as an alternative to large batch processes due to the micro-tubing, which allows for

more heat transfer and adequate results. Many research groups like James. K. Ferri and Roper Pharmaceutical Engineering Laboratory are working towards a common goal to make products that are readily available for the public that will enhance public health well-being. These research groups are focusing on things like supply chain for pharmaceuticals, process intensification, and continuous crystallization for end products.

“Other engineering techniques are being studied to further the advancement in these categories. Additive manufacturing in 3D printing, computational fluid dynamics in biological engineering, and battery materials manufacturing in electrical vehicles are just a few that have been mentioned. There are specific research groups based with these ideas in mind like McGill research group, Lewinski lab for nanoinformatics, Stephen Fong research group for metabolic engineering and sustainability, and Spangler Laboratory for protein engineering. All in all, everyone is working with the idea in mind of biology for all: a new opportunity.”

Starting Your First Position in Industry

Grant Borgognoni provided the following overview: “Starting a new job in industry can be a daunting experience, and many graduates find themselves overwhelmed by the magnitude of their new responsibilities. However, as you embark on this new journey, it's essential to reflect on your past experiences to identify your role and niche in industry. Think back and consider what subjects or projects sparked your interest. Recall the tasks you undertook during your internships and the aspects that you found interesting. These reflections will guide you in under-

standing your strengths and areas of interest. Furthermore, these reflections will allow you to understand where you need to place yourself to become successful.

“Success in your first position hinges on several key factors, and here are the most notable ones to set you on the right path. First, remember that no one expects you to be an expert right off the bat. It is perfectly okay to take your time to learn and absorb as much as possible. Engage with colleagues and leadership, seeking their insights and experiences. Be prepared for challenging days, but use these instances as opportunities for growth. Immerse yourself in the company's processes and operations, ensuring you stay curious and ask questions when in doubt. Build strong relationships with operators—they can be invaluable in your engineering journey, especially in the beginning to understand the process. Don't hesitate to ask for assistance when needed, and be proactive in setting developmental goals with your leadership. Moreover, it's crucial to document your projects and achievements, as this will serve as a testament to your progress and contributions. Strive for a balanced work-life, ensuring you set clear boundaries between your professional life and personal time. Lastly, never shy away from seeking clarity through questions, and continuously invest in your personal and professional growth.”

If you are interested in hearing more about the 2023 ASC, be sure to ask some of our other delegates what they learned.



Mississippi State delegation at AIChE Annual Student Conference, from left: Lucie LeBlanc, Emily Dalton, Caroline Boltz, Catherine Boltz, Laban Hunt, Marian Waltman, Dr. Julie Jessop, Courtney Cochran, Niki Ye, Finnis Ginder, and Hunter Chunn

Let's Talk Safety

Learnings from Process Safety Seminar

by Nathan Keen

AICHE hosted John Champion, Process Safety Principal at the Dow Chemical Company, for a virtual seminar on process safety in mid-November. Champion discussed the importance of process safety in the chemical industry, highlighted a few case studies of watershed incidents, and provided practical advice for incorporating a safety mindset before and after graduation.



John Champion

Members of each undergraduate class participated in the meeting, along with a couple professors who offered

their students bonus points for attendance. Many audience members discussed with Champion and their peers, offering learnings from the case studies and asking about current industry norms and safety initiatives.

Champion emphasized how management of change (MOC) procedures are put in place to encourage deliberation and thoughtful challenges to any significant process changes.

New technologies are being developed with a goal of reducing human error in safety decisions. Technological advancements such as vibration monitors and smarter control systems are already being implemented across the industry.

Another key point was facility siting plans. Intentional placement of process

equipment, control rooms, shops, and other buildings can significantly reduce human risk from plant upsets because physical distance can sometimes be the most important factor in keeping workers safe. Additionally, a "green belt" of open space outside a plant's fence line can be used to shield a surrounding neighborhood from impact in the case of a process safety incident.

Champion offered one final encouragement for the job search process: Judge prospective employers on their process safety focus. Asking questions about a safety culture in first-round interviews is not too early because it is crucial to agree with a company's ideals.

CORNY CORNER ANSWER

Ah

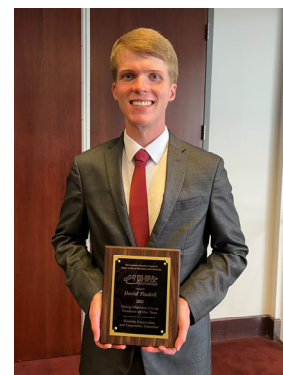
The element of surprise

Tindoll named Co-op Student of the Year

Senior chemical engineering student **David Tindoll** was honored as the Epting/Mathews Co-op Student of the Year this fall. Co-op Students of the Year are recognized for academic excellence, professionalism in the workplace, and leadership. Tindoll completed a three-term co-op at Westlake (Aberdeen, MS), where he worked to improve worker safety and to

install continuous pH meters in the wastewater treatment process to accurately measure data during cold weather.

Tindoll is also a section leader of the Famous Maroon Band, captain of the AIChE ChemE Car team, and member of OXE.



David Tindoll

Congratulations to our Fall 2023 ChE Graduates!

Garrett Crabb

Rebekah Mizelle (AIChE and OXE member)

Suggestions for future Corny Corners? We'd love to hear from you! Feel free to send your thoughts to elmore@che.msstate.edu.

Thank you to everyone who contributed to making our Fall 2023 newsletter a success!
Keep your eyes peeled for our Spring 2024 issue. — Nathan Keen, ChE Newsletter Editor