NC STATE Engineering

EDWARD P. FITTS DEPARTMENT OF INDUSTRIAL AND SYSTEMS ENGINEERING

NC STATE UNIVERSITY OPERATIONS RESEARCH GRADUATE PROGRAM

NC STATE UNIVERSITY MASTER OF ENGINEERING MANAGEMENT NC STATE UNIVERSITY

NC STATE UNIVERSITY INTEGRATED MAUFACTURING SYSTEMS ENGINEERING INSTITUTE

AWARD-WINNING

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InGear 2025

FROM PASSING NOTES TO PAYING IT FORWARD

Tronda Lee and Amy Reamer met passing notes in class. Now, they fund scholarships to support future NC State engineers.

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ISE BY THE NUMBERS

Degrees Offered

- B.S. in Industrial Engineering
- Accelerated Bachelor/Master in Industrial Engineering
- Master in Industrial Engineering
- Master in Industrial Engineering (Online)
- Master of Engr. Management
- Master of Engr. Management (Online)
- Master of Industrial Engineering / Master of Business Administration
- M.S. in Industrial Engineering
- Doctor of Philosophy in IE

Operations Research

- Master in Operations Research
- M.S. in Operations Research
- Doctor of Philosophy in Operations Research

Integrated Manufacturing Systems Engineering

- Master in Integrated Manufacturing Systems Engineering
- Master of Integrated Manufacturing Systems Engineering (Online)

Degrees Granted (2024-2025)

88 Undergraduates

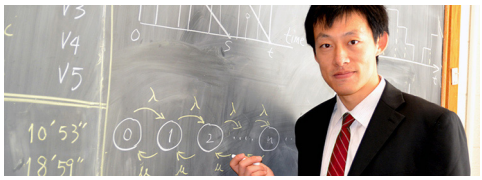
36 Masters

16 Ph.D.s

National Rankings

#11 Undergraduate Program

#14 Graduate Program



Faculty (2024-2025)

33 Tenured and Tenure-track

7 Distinguished Professors

6 Professors

13 Associate Professors

7 Assistant Professors

7 Lecturers

13 Emeritus

5 Adjunct

Enrollments (Fall 2025)

438 Undergraduates

22 Masters

72 Ph.D.s

inGear 2025

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Director of Graduate Programs
Dr. Russell King

Director of Undergraduate Programs
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To receive news updates throughout the calendar year, please subscribe to inGear online by going to *go.ncsu.edu/JoininGear*.

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FROM THE DEPARTMENT HEAD

Dear Alumni and Friends,

When I look back on this past year, I am filled with pride at what our department has accomplished and gratitude for the people who made it possible. The NC State ISE community is strong, and together we are making an impact that reaches far beyond campus.

Our research efforts have truly soared, with more than $7,596,000 in new sponsored research awards and several prestigious honors, including Rohan Shirwaiker's selection for the IISE Technical Innovation Award for his research. Research is one of the cornerstones of our mission as a land-grant institution, right alongside teaching and outreach. None of it happens without the support of state and federal agencies, companies and foundations and donors. Those investments truly pay off, as recent studies show that every $1.00 spent on research brings back about $1.70 in value to society. I wish my stock market account performed that well! The work of our faculty benefits North Carolina in countless ways, creating ideas and solutions that strengthen industries, uplift communities and improve lives across the state and beyond.

We have also embraced the NC legislature's challenge to grow the number of engineering graduates by 40 percent. This fall, ISE welcomed 50 percent more new undergraduate students into the ISE major, a remarkable milestone for us. We also brought two talented new faculty members into the department. As we grow, we continue to refine our programs, expand high-impact learning opportunities and create strong partnerships with industry so our students graduate ready to lead in a rapidly evolving world. We remain committed to fostering an environment for learning and mentorship that provides opportunities for all.

Dr. Julie Swann
ISE Department Head and
A. Doug Allison Distinguished
Professor

Your support, whether through the Day of Giving or other contributions, has made all the difference. Because of you, we can reach and inspire the next generation of engineers, from K-12 campers discovering STEM for the first time to alumni now leading at top companies. You make possible the research breakthroughs, the classroom innovations and the outreach that define ISE.

As we look to the year ahead, I am excited for the new challenges, new opportunities and new stories we will create together. Thank you for being part of the ISE family and for helping us write the next chapter of our shared success.

Julie L. Swann

Julie Swann

Do you like inGear?

Please take a second to tell me what you like and what you would like to see (jlswann@ncsu.edu).

Thanks,

Julie

5 Questions with ...
ROHINTON "RONNIE" KARANJIA

Ronnie Karanjia, Ph.D. in finance (UNC-Chapel HIII), earned his master's of science degree in industrial engineering from NC State (1990). He began his academic career as an assistant professor in finance, teaching for nine years at Fordham University and later at the University of Notre Dame. Since 1999, he has worked in banking, starting at Wachovia (now Wells Fargo), then moving to Bank of America. Karanjia subsequently served at the Federal Reserve Board of Governors under Alan Greenspan, and later held roles at Charles Schwab, JP Morgan Chase, PNC Bank and currently Citigroup. In each position, he focused on credit, market and operational risk management. Along the way, he led quantitative teams ranging from one to 57 members. Notably, in 2004, he conducted a counterparty credit risk study at the Federal Reserve that showed U.S. banks could withstand government-sponsored enterprise-related interest rate shocks—an insight later validated by the 2008 Financial Crisis.

1. **What is the single most important experience or understanding you gained in the ISE department?**
   It all ends with hard work. First one must take the initiative, be creative, plan wisely but the drive and work must be there to ensure that the final appropriate results are generated.

2. **What is the most pressing issue facing human society that engineers should be working harder to solve?**
   Given limited natural resources, I believe it should be to engineer solutions to ensure that these resources get stretched to meet the needs for our future generations. Recent examples include vegan leather, meat protein and milk substitutes.

3. **What would you like to accomplish in your career? What are you most proud of so far?**
   As a Ph.D., I have always enjoyed teaching what I have gained in both academic and real world experience. I also enjoy mentoring and placing talented students in the real world.

   Since my career has mostly been working at large US banks, I am most proud of completing a cross US large multi-national bank counterparty credit risk study at the Federal Reserve Board of Governors under Alan Greenspan which showed that the largest six U.S. banks would safely survive an interest rate risk fallout were the GSEs (Fannie Mae, Freddie Mac, Ginnie Mae, etc.) to fail.

4. **If you were not in the engineering field, what would you likely be doing?**
   Easy answer. I used to be an assistant entertainment editor at the Technician, acted in local theatre in Raleigh and in Chapel Hill and again on Broadway. So I would be working along these lines had I not remained in engineering and finance.

5. **What advice do you have for current ISE students?**
   Set realistic goals, then strive to do your best to achieve them even if this involves failure or rejection or unacceptance. Pure effort, hard work and perseverance always pays off.

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FROM PASSING NOTES TO PAYING IT FORWARD

25 years ago, Tronda Lee and Amy Reamer met passing notes in a statistics class held in Harrelson Hall. Now, they fund scholarships to support future NC State engineers.

04

AI PIONEER TURNS PROFESSOR AND MENTOR

Awarded a spot on the 2025–2026 AI150 list, Ed Addison brings decades of AI experience to the classroom as a mentor and professor.

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THE RISING VALUE OF OR AND ISE CAREERS IN A CHANGING WORLD

Lifelong learning and adaptability, key in operations research and industrial and systems engineering, are crucial as many future jobs are evolving, empowering graduates to innovate.

08

ISE JUMPS TWO SPOTS, EYES TOP 10

NC State ISE rises to 11th in U.S. News undergraduate rankings, raising degree value and moving closer to a national Top 10 spot.

2025 FOLIO: EDDIE AND OZZIE AWARDS

INGEAR NAMED 2025 FOLIO: EDDIE AND OZZIE AWARDS FINALIST

The Eddie and Ozzie Awards are one of the most respected honors in the media and publishing world—they're like the Oscars, but for magazines, digital publications and editorial design. Being named a finalist means inGEAR has been recognized as some of the very best in the entire industry, standing out among countless entries from around the world.

AI PIONEER TURNS PROFESSOR AND MENTOR

Forty years ago, Ed Addison took his first artificial intelligence (AI) course at MIT. At the time, few had even heard of AI. "Back then, it was a niche curiosity," Addison recalled. "Most people didn't know it existed. It certainly wasn't something that showed up in the headlines."

Today, AI is shaping everything—from virtual assistants to autonomous robots—and Addison isn't just watching from the sidelines. He's been at the forefront of the revolution for decades: founding startups, securing patents, and now, as a professor at NC State University, preparing the next generation of leaders to work in AI-powered workplaces.

And his impact hasn't gone unnoticed. Addison was recently named to the Constellation Research AI150 list for 2025–2026, an elite group of global executives leading the transformation of AI across industries. "I was honored to be selected," he said. "It's especially meaningful because the nominations come from peers—people who understand the field and know how hard it is to do this work well."

Shaping Leaders, Not Just Technologists

Addison teaches AI for Engineering Managers, a course that combines technical awareness with big-picture strategy. "My students aren't here to become AI engineers," he says. "They're here to lead technical teams, make high-stakes decisions and think systemically about how AI transforms organizations."

His approach is grounded in real-world application. "We use case studies from manufacturing, finance and healthcare—so students can see how AI influences not just operations, but strategy. They need to understand the tools, yes, but more importantly, they need to understand the impact."

The course includes hands-on exposure to tools like GPT-5 and PyTorch. "I don't expect them to master the code," Addison clarified. "But they should be fluent enough to understand what their AI teams are doing, how to evaluate proposals, and how to manage both people and machines."

The Next Frontier: Hybrid Teams of Humans and AI Agents

What excites Addison most these days is the emerging world of multi-agentic AI—teams where not all contributors are human. "We're entering a world where autonomous software agents and even humanoid robots are part of the team," he explained. "They're not just responding—they're collaborating, negotiating and learning."

He believes this shift will fundamentally change leadership. "Leaders need to think differently when some of their team members are machines," he said. "It's no longer about just assigning tasks—it's about orchestrating complex, adaptive systems."

In his class, students explore how to manage these hybrid environments: how humans and AI agents can work together effectively, and what happens when their goals don't perfectly align. "It's a profound change in how organizations operate," Addison said, "and students need to be ready for it."

Teaching AI Ethics as a Core Leadership Skill

Addison also puts a strong emphasis on the ethical and responsible use of AI. "We talk a lot about hallucination, bias, copyright and plagiarism," he said. "Prompting itself is treated as a discipline—because how you ask the question matters."

He frames ethics not as an afterthought, but as central to leadership. "Responsible AI use is both a leadership skill and a social obligation," he said. "We don't dwell on fear—we focus on equipping students to lead with clarity, accountability, and strategic foresight."

A Career of Innovation—Now Focused on Teaching

> **"Leaders need to think differently when some of their team members are machines."**

Before becoming a full-time professor, Addison taught part-time for 18 years while launching a series of AI-driven startups. Over the past 35 years, he's started five companies, raised capital for four, sold three and now serves as Chairman of the Board at Cloud Pharmaceuticals. He's also helping NC State graduates form a new company focused on agentic AI.

His academic background is just as rich: two master's degrees in engineering (electrical and biomedical from Johns Hopkins), an MBA from Duke, a JD in law and all coursework completed for a Ph.D. in AI from MIT. "I had to leave the Ph.D. to earn income," he said, "but the foundation I built there continues to shape how I think and teach."

Addison has also been awarded three patents in AI, and serves on the board of directors of the American Society for Artificial Intelligence. He's a frequent public speaker on topics including AI in healthcare, entrepreneurship and venture capital.

A Global Honor, A Local Impact

Addison's selection to the AI150 recognizes his lifelong commitment to innovation, ethics, and real-world impact. The list highlights the world's most influential AI leaders across industries—from healthcare to retail to higher education. In addition to global recognition, honorees receive access to the Constellation Executive Network, where executives share ideas on strategy, innovation, and digital transformation.

"I've spent my life building AI companies," Addison said. "Now I'm building the people who will lead the next generation of them. That's the most rewarding part."

And if his track record is any indication, his students won't just be ready for the future—they'll help shape it. ■

ISE WELCOMES NEW FACULTY

DRIVING AI SOLUTIONS

JAKE PELOQUIN

Jake Peloquin recently completed his Ph.D. and is already making waves in advanced manufacturing. His research combines AI with materials science to design lighter, stronger, and more reliable materials. These innovations have real-world applications in aerospace, medical devices, and energy systems.

"AI can help us design new materials in two main ways," Peloquin explained. "First, it can identify promising recipes or formulas for materials that improve properties like strength, toughness, or durability. Second, it can help us fine-tune the way these materials are manufactured, making it easier to scale from small laboratory experiments to consistent, high-quality production."

Attracted to NC State's mission as a land-grant university, Peloquin shared why he chose ISE. "NC State is a land-grant university, and I feel a strong connection with its mission to serve students and promote well-being locally in North Carolina and on a national and global scale. The department's breadth, spanning operations research, optimization, and manufacturing, creates a collaborative environment that is difficult to find in more traditional departments, making it an ideal place to grow my research and teaching."

Teaching and mentoring are also key parts of his motivation. "Looking back, I realize the people who most inspired me were my professors, and I wanted to have that same impact on others. At NC State, I'm excited to continue that tradition, helping students discover their passion for engineering while building a research program that advances how we design and manufacture new materials."

Making Technology More Sustainable

Gal Mendelson focuses his research on making industries and data centers more efficient at a time when energy use is a global concern. By applying AI to the energy revolution, he is developing smarter systems for everything from home batteries paired with solar panels to green data centers powered by hydrogen storage.

"We are living through two major revolutions in artificial intelligence and energy," Mendelson said. "Both are transforming our world, and many of the biggest challenges

emerge at their intersection. AI will continue to grow, and it requires enormous amounts of energy. I feel a responsibility to help ensure that this growth happens as efficiently and sustainably aspossible."

GAL MENDELSON

He also sees his role as both research and inspiration. "I see my research contributing in two ways. First, through the research itself — by advancing our understanding of complex systems and developing solutions for emerging technologies that support sustainable energy use. Second, through the people I work with — colleagues, students, and industry partners — where I hope that my passion for energy and sustainability is contagious, inspiring others to care more deeply and take action in this area."

When asked what drew him to NC State, Mendelson highlighted the ISE culture. "I was looking for an academic home where I can truly be myself, a place that values fundamental operations research while encouraging connections between theory and practice. I wanted a department that emphasizes teaching, mentoring, and outreach, and where collaboration and support are part of the culture. NC State ISE embodies all of these qualities, which makes it the right place for me."

Shaping the Future of ISE

Together, Peloquin and Mendelson represent the next wave of ISE innovation. Their research in AI-driven manufacturing and sustainable energy reflects the department's mission to serve students, advance knowledge, and make a difference locally and globally.

"I'm honored and grateful to be of service to the ISE Department, the College of Engineering, NC State University, and the state of North Carolina," Mendelson said.

The ISE community is proud to welcome them both and looks forward to the impact they will have in the classroom, in their research, and in shaping a better future. ■

Fast Facts

Meet Jake Peloquin and Gal Mendelson

JAKE PELOQUIN

Research Focus: Using AI to design and manufacture advanced materials for aerospace, medical devices, and energy systems.

Why NC State? "NC State is a land-grant university, and I feel a strong connection with its mission to serve students and promote well-being locally in North Carolina and on a national and global scale."

Fun Example of His Work: Orthopedic implants with microscopic pores that encourage bone growth and lightweight lattices for aircraft that save fuel.

Student Impact: "Looking back, I realize the people who most inspired me were my professors, and I wanted to have that same impact on others."

Even or Odd? "I'd say imaginary numbers, they're more complex."

GAL MENDELSON

Research Focus: Developing AI-powered solutions to reduce energy waste in industries and data centers, with applications from home batteries to hydrogen-powered microgrids.

Why NC State? "I was looking for an academic home where I can truly be myself, a place that values fundamental operations research while encouraging connections between theory and practice."

Big Picture Motivation: "We are living through two major revolutions in artificial intelligence and energy. Both are transforming our world, and many of the biggest challenges emerge at their intersection."

Student Impact: Hopes his passion for energy and sustainability inspires colleagues and students alike to take action.

ISE JUMPS # TWO SPOTS, EYES TOP 10

The ISE undergraduate program climbed from 13th to 11th in the U.S. News & World Report rankings. This jump puts the program just outside the nation's Top 10 and highlights its strength in teaching, research and student success.

Attracting Students

Because of this higher ranking, more high school students and families will notice NC State ISE. Rankings often shape decisions and this recognition confirms the program's quality courses, modern labs and career support. As the program nears the Top 10, ambitious students seeking the best opportunities will take notice.

Department Head Julie Swann explained, "ISE consistently has strong employability of graduates with positive salary outcomes, and high job satisfaction. In the last year alone, the new students entering ISE grew over 50%. We also spend time on outreach such as through high school camps and sharing the ISE story with Freshman at NC State, which helps us find students who are passionate about our discipline."

Recruiting Faculty

The improved ranking also boosts faculty recruitment. Professors seek schools with momentum and national respect and ISE's reputation now stands out. Being close to the Top 10 strengthens the department's position. Recognition also helps faculty secure partnerships and larger research grants which directly benefit students. According to Swann, "ISE is ranked in the top 10% of our peer degree programs nationwide. All of these factors help us continue recruiting excellent students and faculty."

Adding Value for Students and Alumni

Because of the ranking climb, the value of an ISE degree continues to rise. Employers often see graduates from Top 10 programs as better prepared. Current students will benefit in the job market while alumni gain from the increased respect tied to their degrees.

Swann emphasized, "The Bachelor's in ISE is an amazing value for students and alumni, with high documented return on investment for individuals and for the state as a whole. Increased visibility and rise in reputation increases the value of the degree, enhancing the marketability of our graduates to employers and signaling the quality of our education throughout the state, country, and beyond."

Supporting College Growth

Meanwhile, the College of Engineering plans to grow enrollment by 40 percent. A Top 10 push in ISE helps attract the best students and professors to support this effort. At the same time, it ensures growth happens without lowering quality.

Looking Ahead

Although rankings are only one measure, this rise reflects the hard work of students, faculty and staff. Swann noted, "Our mission as a land grant university is focused on high-quality education, contributing to new knowledge, and impact communities and industry. We are continuously revising our curriculum and professional development, investing in new research areas such as applied Artificial Intelligence, and translating research into practice."

She pointed to the senior design capstone as a shining example: "Our senior design capstone course is an excellent example of students impacting industry before even joining the workforce, where we have a history of partnering with companies, government, and non-profits to solve their challenges.

Finally, Swann added, "While rankings are an imperfect system, I want to acknowledge the significant work on the part of our faculty, staff, students and alumni that have contributed to our recognition nationally and beyond. NC State has great programs, and we look forward to continuing to deliver while telling our story for increased visibility."

ISE FACULTY SPOTLIGHT

JORDAN **KERN**

When Jordan Kern began college, he didn't plan to become an engineer. In fact, he attended UNC Chapel Hill which doesn't offer an undergraduate engineering program. Instead, he studied science and became deeply interested in complex systems. Over time, that interest grew into something more.

A Slow Start with Engineering

Unlike many engineers, Kern didn't build machines as a kid. "I only had a little direct exposure to engineering as a kid," he said. "Science, yes, but not engineering." However, halfway through college, he realized he enjoyed solving challenging problems. "I had a strong interest in understanding complex systems and problem-solving," he said. As a result, he began to consider a career in engineering seriously. But since UNC didn't have the right program, he waited until graduate school to make the switch.

Finding Direction in D.C.

After graduating, Kern took a job in Washington, D.C. He worked at the U.S. Department of Energy as a contractor. "It was mostly administrative work," he said, "and as a 22-year-old I didn't like it very much. I was bored." Around the same time, his fiancée applied to MD/Ph.D. programs across the country. Kern wanted to help choose where they would move next. So, he decided to apply to graduate school as well.

A New Path Opens

Eventually, his wife picked Duke University. That decision brought Kern back to UNC, where he earned both his master's and Ph.D. in environmental engineering. "I looked for programs where I could study energy and water resource systems both from an engineering and financial/economic perspective," he said. During graduate school, he focused on energy and water systems. He studied them from both engineering and economic viewpoints.

A Career Shaped by Family

When he earned his Ph.D. in 2014, Kern had twin toddlers at home. His wife was still finishing her long medical program. As a result, he sought jobs that allowed him to stay nearby and be flexible. "I wanted to work in the private sector," he said, "but I was the primary caregiver at home." He added, "This was long before remote work became common." He couldn't move far, so he took a research faculty job at UNC. Even though academia wasn't his first choice, he gave it a try. "Turns out I did like academia," Kern said.

Becoming Part of NC State

In 2018, Kern joined NC State as an assistant professor. At first, he worked in the Department of Forestry and Environmental Resources. "I was still very geographically constrained," he said, "and it was my only academic offer." Although he enjoyed it, he still wanted to be in an engineering department. "I knew being in an engineering department would be a better fit," Kern explained. So, in 2023, he moved to the Department of Industrial and Systems Engineering. There, he found a better fit for his work and interests.

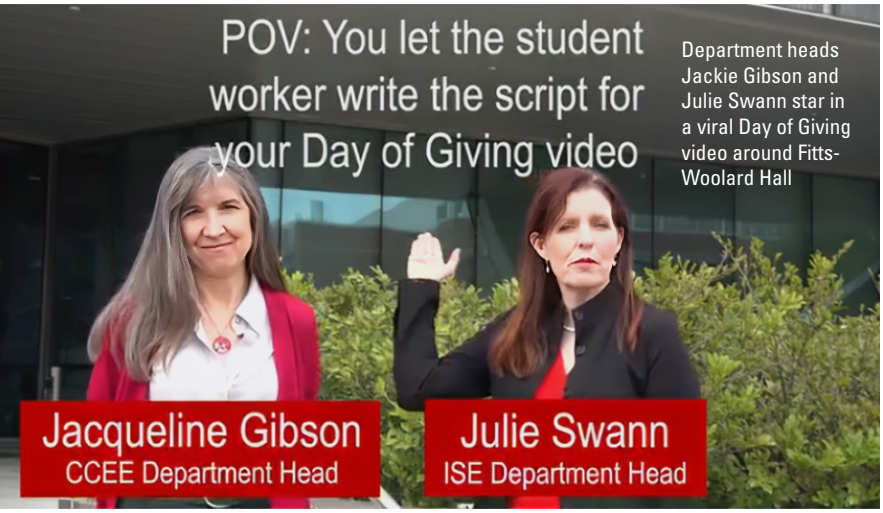
Looking Ahead

Kern's story shows that career paths don't need to follow a straight line. His journey began with uncertainty, yet it led to a place where he could thrive. Even without early plans for engineering, he found his way by staying curious and open to change.

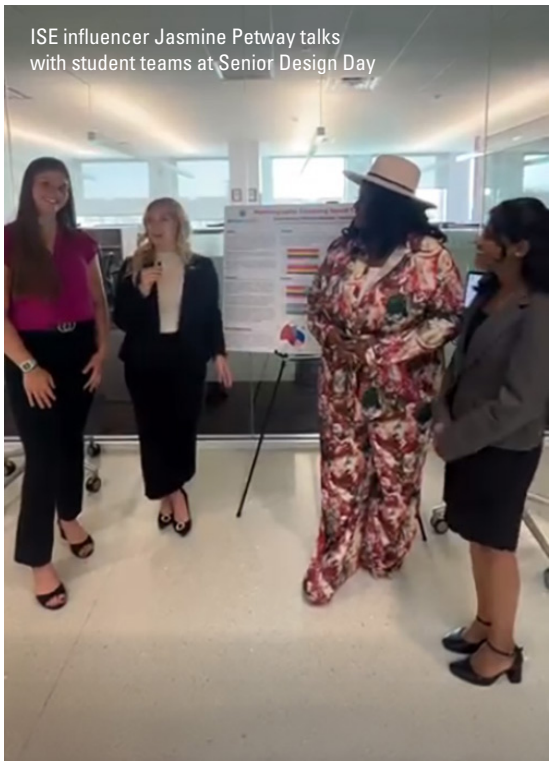
ISE "SEEN"

It's an exciting time to be part of ISE, and these photos prove it. Have you been seen?

Sebastian Rodriguez-Cartes defends his dissertation in one of the new conference rooms in Fitts-Woolard Hall



Department heads Jackie Gibson and Julie Swann star in a viral Day of Giving video around Fitts-Woolard Hall



ISE influencer Jasmine Petway talks with student teams at Senior Design Day

A unique ar
child (Audr
graduation

MEM director Brandon McConnell gets dunked at the College of Engineering's Fall 2025 POP Back Event

Students from around the world visit the ISE Department

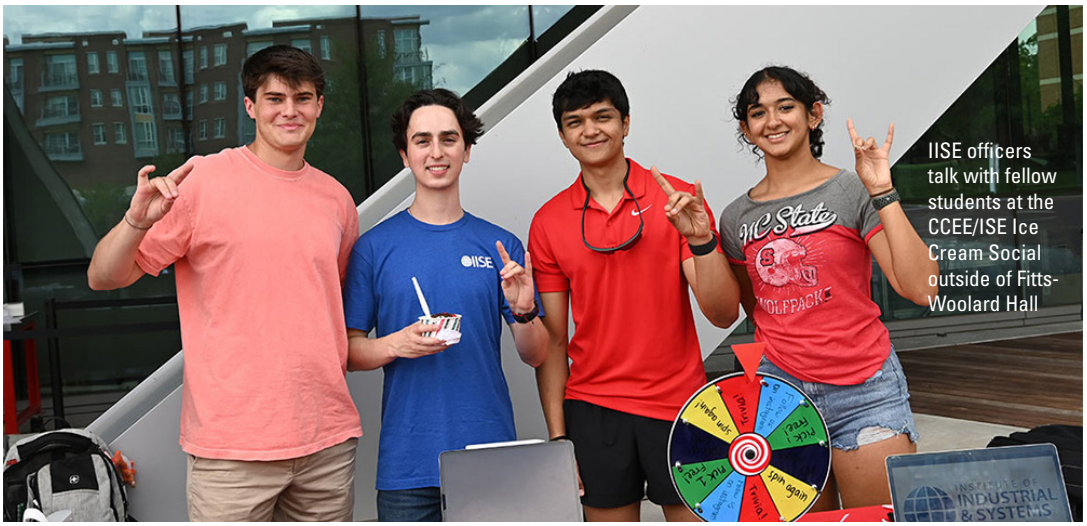
Not to be outdone by the undergrads, ISE's graduate program moved from 15th to 14th in the latest U.S. News & World Report rankings

Undergrad director Kanton Reynolds takes a tour of the C130 aircraft by alumna Elizabeth Poinsette at Lockheed Martin

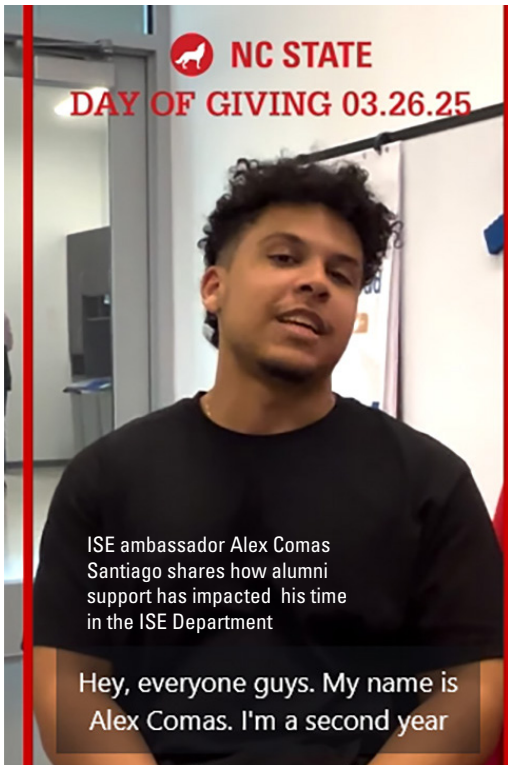
Get to Know...Laura Mora, OR Ph.D. student. She was featured in Diversity in Action Magazine

nd awesome way to support your ey Westlund) at the ISE Spring ceremony.

For the first time, an undergrad (Andrea Zamudio) got to speak at the spring graduation ceremony held at the McKimmon Center



IISE officers talk with fellow students at the CCEE/ISE Ice Cream Social outside of Fitts-Woolard Hall



ISE ambassador Alex Comas Santiago shares how alumni support has impacted his time in the ISE Department

To celebrate the inaugural ISE Day (October 15th),ISE faculty and staff posed for this photo

GRADUATE STUDENT SPOTLIGHT | NAFI AHMED

As a child in Bangladesh, Nafi Ahmed often watched his father, a civil engineer, solve real-world problems with skill and focus. Those early observations made a strong impression. Curious by nature, Ahmed constantly asked questions like "why" and "how," which gradually shaped his mindset.

He explained, "My interest in engineering was sparked at a young age. Growing up with a civil engineer father left a lasting impression." Although he once considered medical school, he found engineering better suited his curiosity and love of problem-solving. Over time, he discovered a natural fit in industrial and systems engineering (ISE).

"I was that curious child always asking 'why' and 'how'—a mindset that naturally evolved into a passion for engineering," Ahmed said. "Engineering offered the perfect blend of logic, problem-solving, and the potential to make a real-world impact."

While searching for graduate programs, Ahmed explored options across North America and Europe. However, NC State University quickly stood out. "NC State stood out to me for its renowned ISE program, exceptional faculty and state-of-the-art facilities," he explained.

He also valued its research culture and proximity to Research Triangle Park. After speaking with Bangladeshi alumni and reviewing faculty profiles, his choice became clear. "The welcoming community, mild weather and collaborative environment made it even more appealing," he added. "NC State felt like the ideal place, and it's a decision I am very proud of."

Currently, Ahmed conducts research at the Bezos Center for Sustainable Protein under Rohan Shirwaiker. There, he works on cultivated meat—cell-based protein created through scalable bioprocessing. "I'd love to highlight my research in biomanufacturing, particularly on developing cultivated meat as a sustainable, next-generation alternative protein," he said.

He believes this work can address food insecurity and environmental concerns at scale. "We explore scalable bioprocessing strategies aimed at addressing the global nutritious food demand crisis," he explained. "I hope our work helps build a more resilient, ethical, and sustainable food future for generations to come."

Although his undergraduate studies provided a strong foundation, Ahmed felt compelled to dig deeper. "I craved a deeper understanding, especially in complex, evolving fields like optimization and advanced manufacturing," he said. "Four years of undergraduate education weren't enough to make the meaningful impact I aspired to." Graduate school, therefore, offered the path he needed. It gave him a way to specialize and contribute through research.

Ahmed hopes to pursue an academic career. "My long-term goal is to pursue a career in academia, where I can continue exploring research questions and mentoring the next generation of engineers," he shared. Nevertheless, his internship at Eli Lilly and Company also opened doors. "I remain open to research-intensive R&D roles in industry that align with my passion for innovation in biomanufacturing," he added.

Outside of research, Ahmed serves as Vice President of the SME Student Chapter and is active in the Bangladeshi Student Association. He also enjoys volleyball for recreation and stress relief. "These activities help me stay grounded, connected, and energized beyond the school," he said.

As he looks ahead, Ahmed is driven by hope. "The future belongs to those who give the next generation reason for hope," he concluded. Through engineering, Nafi Ahmed is doing exactly that. ■

THE VALUE OF UNIVERSITY RESEARCH

In uncertain times the role of university research feels especially important. The work happening on campuses across the country fuels our economy, improves health and shapes the way we live. Many of the tools we now take for granted such as GPS, smartphones and medicines like Narcan started as university research projects. These stories remind us that investments in research often pay off in ways no one could have predicted.

Universities have also given us some remarkable breakthroughs. A professor at Stony Brook helped lay the groundwork for MRI technology and eventually earned a Nobel Prize. Stanford researchers created the search algorithm that became Google. Cornell engineers designed the three-point seatbelt that makes driving safer every day. These examples show how collaboration and curiosity can lead to discoveries that touch millions of lives.

Not every project has a clear use right away, but that does not make it less valuable. MIT's laser research ultimately enabled the development of the iPhone. Insulin emerged from experiments that were not initially focused on diabetes, yet it has saved countless lives. Even something as unexpected as studying gila monster venom led to treatments for diabetes and obesity. At the University of Kentucky, scientists built on that work to uncover a protein that helps regulate blood sugar.

What makes universities special is the culture they create. These are places where big questions are encouraged, risks are worth taking and future researchers learn how to push boundaries. Without that environment, many of today's everyday technologies simply would not exist.

In the end the case for research is both practical and hopeful. It helps our economy, improves health and drives innovation. It also speaks to something deeper, our shared desire to understand the world and make it better. ■

KING OF THE WINNERS

Russell King has once again proved his skill in teaching by winning the Clifton A. Anderson Outstanding Faculty Award for the seventh time. This honor is even more impressive because winners must wait five years before they can win again. Students choose the winner, showing how much King has influenced the Industrial and Systems Engineering Department at NC State University. His continued success shows his strong dedication to teaching and mentoring, setting a high standard for faculty.

King, a top professor in the department, holds the Henry L. Foscue Distinguished Professorship. He has made big contributions to research in logistics, scheduling and inventory control, focusing on additive manufacturing, remanufacturing and military systems. He has also advised companies like Ford Motors, the Gap and Dillard's Department Stores. Before becoming a professor, he worked as a systems analyst and an industrial engineer, gaining valuable industry experience. The award's rules require a five-year wait between wins. Even with this rule, King has still been named the best teacher by students seven times, proving his lasting excellence.

King is known for his love of teaching and his focus on student success. He has won many awards for his teaching and advising, showing how much he helps students. His energy for mentoring makes him a favorite among them. His influence goes beyond the classroom, helping shape future industrial and systems engineers. ■

TIAN RECEIVES NATIONAL AWARD

Renran Tian, an assistant professor in the Fitts Department of Industrial and Systems Engineering, received a top honor this spring. He earned the National Science Foundation CAREER Award, a major award for early-career researchers in the U.S.

NC State recognized Tian and 25 other faculty members on April 8 at the 2025 Celebration of Faculty Excellence. The event is held each spring to honor faculty who earn major state, national or international awards during the year.

2025 marked the fourteenth year of the Celebration of Faculty Excellence. In recognition of all honored faculty, the university lit the Memorial Belltower red for the night on April 8. ■

UNDERGRAD STUDENT SPOTLIGHT | ASHTON SUMPTER

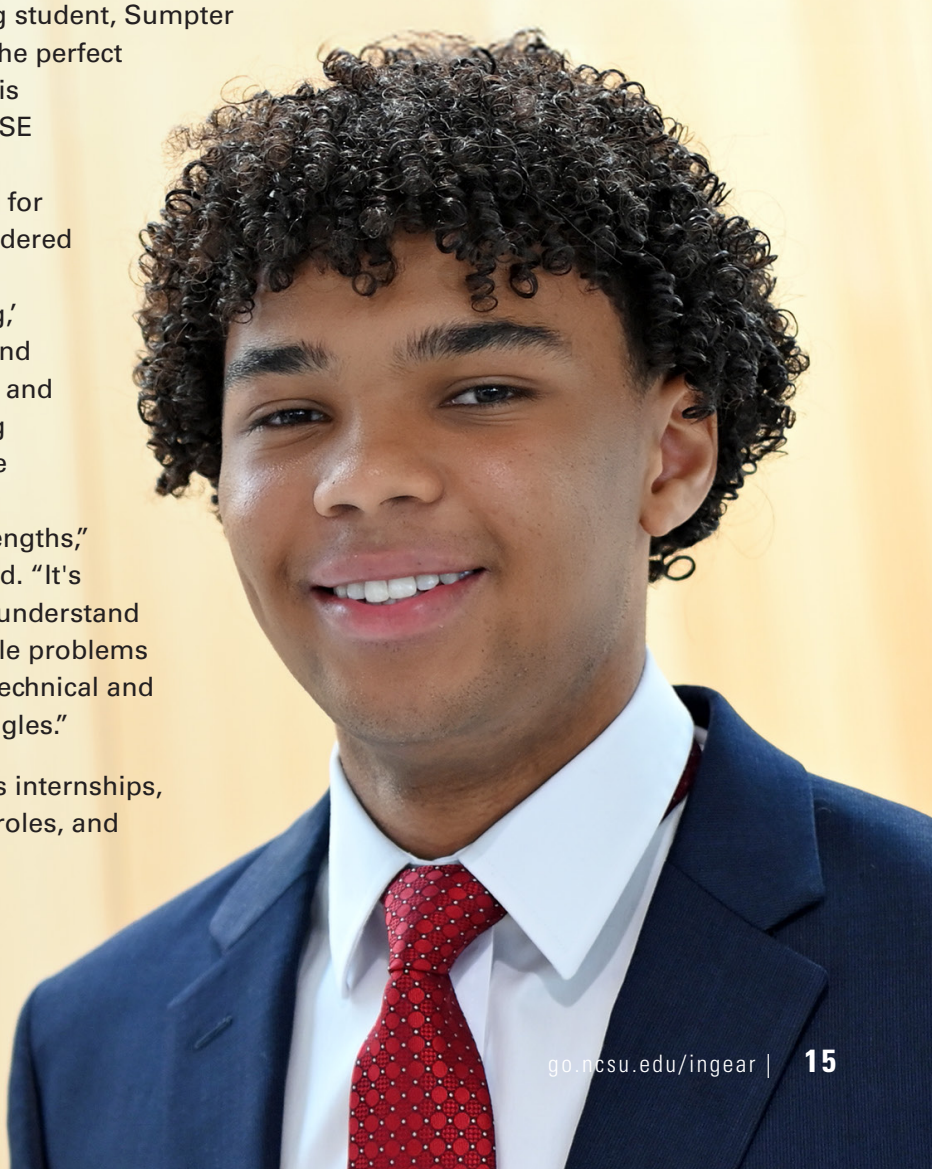
Ashton Sumpter's journey into engineering began long before he stepped onto NC State's campus. It started in childhood with toy blocks, makeshift huts and an insatiable curiosity for building. "When I look back at my younger self, I always envision a kid who loved to build things," Sumpter recalled. "Whether it was building a hut outside with sticks and leaves or building towers with toy blocks, I was always creating something at a young age."

That early creativity evolved into purpose when, in eighth grade, Sumpter joined his school's tech club and entered the national Future City Competition—a STEM challenge that tasks students with designing and presenting sustainable cities of the future. The experience was pivotal. "This experience is where my love for engineering ignited," he said. "I still remember coming to NC State's McKimmon Center to present our work and from then on, I knew I wanted to become an engineer."

That moment at the McKimmon Center not only sparked a passion for engineering but also planted a dream: to one day attend NC State. "When I reached high school, I really only saw myself going to NC State," Sumpter said. "It seemed as if this school had everything I was looking for." But with tuition posing a concern, his path could have taken a different turn—until he was awarded the Goodnight Scholarship, a full ride that sealed his decision. "As soon as I received that phone call from the program, I knew this is where I would attend."

Now an Industrial and Systems Engineering student, Sumpter has found the perfect match for his interests. "ISE sometimes catches flak for being considered 'business engineering,' but that blend of business and engineering has become one of my biggest strengths," he explained. "It's helped me understand how to tackle problems from both technical and strategic angles."

Through his internships, leadership roles, and community involvement, Sumpter is building more than systems—he's building a future grounded in purpose and impact. His story—from backyards to Future City, and now to NC State—is a testament to the power of early exposure, perseverance and the drive to create. For Sumpter, engineering isn't just a career. It's been a calling since day one. ■



4 Reasons YOU D

1 "I already paid you what I owe."

Yes. We understand that you may still have student loans or other forms of debt and are not in a place to support the Department financially. That's why we created the FREE ISE Alumni Engagement Program (**go.ncsu.edu/alumni-resources**), which offers nonmonetary ways to give back.

Volunteering is one of the most significant ways to impact a student's experience. Sharing your expertise and wisdom to help prepare them for their careers is an invaluable resource. We offer one-time events and ongoing programs to fit your commitment level better. This help can be reviewing resumes, running mock interviews, speaking to students in class, offering internships and co-ops and giving industry tours. These enrich the students' experience and prepare them for the future.

We would never want your volunteerism to cause you hardship. To see all the different ways you can share your expertise and wisdom and get answers to your most common volunteering questions, go to our volunteering page (**go.ncsu.edu/ISEvolunteer**).

2 "What are you doing for me?"

Fair question. We understand that the typical alumnus-university relationship can be somewhat one-sided. We want to change that by offering you career and educational resources to help you further your career.

The first resource is the private ISE/OR/IMSEI/MEM Alumni Group on LinkedIn. With over 1550 members currently, it is an excellent resource for networking with your fellow alums, asking questions and finding job postings—both the Department and alumni post jobs in the group. ISE, OR, IMSEI and MEM alums, students and faculty are encouraged to join the group by going to **linkedin.com/groups/8285397/** and clicking on the JOIN button.

There are also resources available that you can explore on our website (**ise.ncsu.edu/engagement/resources/**). We offer multiple webinars and podcasts for career advice that cover various subjects, from financial planning and retirement to leadership skills training.

on't Get Involved

3 *"You only call when you want money."*

Agreed. We don't want you to feel like you are being solicited. We would never want your support of the Department to cause you hardship. Even when the University asks for help, we know that volunteering your time and sharing your experiences are just as important as financial gifts.

We also understand our alums and friends give what they can. Your time and resources are valuable, and your drive to make a difference in a student's life is greatly appreciated. Again, we offer many ways to give back, like flexible, one-time events, including volunteering your time through class presentations, panels and lectures. Dedicating a day to being a judge at ISE Senior Design Day is another way to give a small amount of your time. If you enjoy long-term projects, we have an Alumni-Student Mentoring Program or become a senior design sponsor. See more at (**go.ncsu.edu/ISEvolunteer**).

4 *"I don't know where my money is going."*

We can relate. Nobody wants to feel like their hard-earned money is going into some vast fund and spent on who knows what.

All gifts to the Department allow our students and faculty to fulfill their dreams and positively impact their lives. Your gift can support scholarships, fellowships, professorships, academic programs and faculty research. Your generosity empowers ISE to achieve excellence in our research, teaching and public engagement mission. There are more than eight distinct funds you can contribute to directly.

Specifically, The ISE Enhancement Fund addresses one of the Department's greatest needs, discretionary support. Every year we face the challenge of uncertain and shifting resources. Not sure how you want to help? Contact Monica Morgan (**mkmorga4@ncsu.edu** or **919.515.8888**), and she will be happy to guide you through the process.

Have we given you enough good reasons to engage with your program?

go.ncsu.edu/ISEvolunteer

FROM PASSING NOTES TO PAYING IT FORWARD

Amy and Tronda met passing notes in class. Now, they fund scholarships to support future NC State engineers

In a packed lecture hall at NC State's Harrelson Hall 25 years ago, Amy Reamer and Tronda Lee sat beside each other in an ST 371 statistics class. Their professor was known for his strict no-talking rule, but that didn't stop them. Instead, they passed notes back and forth in Reamer's notebook.

"I still have that notebook somewhere," Reamer recalled with a smile. "We studied together, started tailgating for Wolfpack football games together, and the rest is friendship history!"

That small moment sparked a lifelong friendship. From their love of NC State athletics to their shared passion for various hobbies, Reamer and Lee quickly realized they were kindred spirits.


WOLFPACK
EST.
1887
NC STATE
ENGINEERING
FOUNDATION
Tronda Lee

"We have a lot in common, from our love of Wolfpack sports to our affinities for mathematics, organizing and traveling!" Reamer said. "Tronda is from Salisbury, NC, where my grandmother was born and raised, and I always thought that was such a neat connection."

Beyond common interests, their friendship has been built on loyalty and kindness. "She is the most loyal friend you could ever have," Reamer said. "If you need something, she is there in no time at all with Panera soup in tow."

For Lee, their bond goes even deeper. "There are so many factors that have led to my lifelong friendship with Amy," she said. "However, if I have to pinpoint something, it would be the alignment of our moral compass and values."

Their friendship, which started with simple notes in class, has stood the test of time. Reamer hopes her children will one day have a friendship as meaningful as hers with Lee. "I count her friendship as one of my most treasured blessings," she said. "I hope my kids are lucky enough to have a Tronda in their life someday—someone who is funny, smart and a passionate community advocate."

Paying it Forward

But their bond goes beyond friendship. Their shared experience in NC State's Edward P. Fitts Department of Industrial and Systems Engineering (ISE) shaped their careers and inspired them to give back.

> "I owe pretty much all of my professional success to the ISE department."
>
> Amy Reamer

"I owe pretty much all of my professional success to the ISE department," Reamer said. "I wouldn't be who I am today without the opportunities afforded to me in ISE at NC State."

Reamer recalls how the support from faculty, staff and fellow students—especially their academic advisor, Clarence Smith—made a lasting impact. "As many alums will attest, I am particularly grateful for the support of Clarence Smith, the department's academic advisor. He has remained a valued mentor long since I turned the tassel on my graduation cap."

Lee agrees and appreciates how ISE prepares students for technical and business challenges. "I decided to support the ISE Department because it provides a diverse perspective of technical skills and business acumen to their students, which is not offered by all disciplines of engineering," she said.

Both women received scholarships while at NC State, which allowed them to focus on their education. Now, they want to give others the same opportunity.

"As a student, I was fortunate to receive financial support from the College of Engineering and ISE, which enabled me to focus primarily on my studies," Reamer said. "I hope our scholarship affords the same opportunity to a current ISE student—to be able to treat their education as a full-time job and take advantage of co-curricular opportunities that maximize their collegiate experience."

> "Stay curious! Actively question assumptions to expose hidden opportunities and to refine your understanding."
>
> Tronda Lee

They also encourage students to build strong relationships with mentors. "Make connections with your professors and academic advisors by visiting them during office hours." Reamer said. "During those visits, I learned about ISE content certainly, but I also enjoyed getting to know them as people."

Lee added, "Stay curious! Actively question assumptions to expose hidden opportunities and to refine your understanding."

From passing notes in class to funding a scholarship for future engineers, Reamer and Lee have come full circle. Their lifelong friendship and dedication to NC State's ISE department will help shape the next generation of engineers.

THE RISING VALUE OF OR AND ISE CAREERS IN A CHANGING WORLD

Today's fast-moving world demands new skills. Degrees in Operations Research (OR) and Industrial and Systems Engineering (ISE) give students those skills.

The Future of Jobs Report 2025 by the World Economic Forum highlights what employers want. They value analytical thinking, problem-solving and the ability to work across systems. OR and ISE programs teach those exact skills.

The report lists in-demand careers such as data analysts, AI specialists, automation professionals and big data experts. OR and ISE students prepare for these roles with hands-on, technical coursework.

Maria Mayorga, director of the OR program, said the curriculum adapts quickly. "The OR program allows great flexibility by allowing elective courses to come from any STEM discipline," she said. "As such, students can take courses as they become available such as neural networks from the computer science department."

Faculty also design special topics courses. Recently, students studied Optimization for Machine Learning and High Dimensional Data Analytics. This fall, they can take Applied Optimization for Energy and Power Systems or Risk, Resilience and Sustainability.

Julie Swann, head of the ISE department, explained how the ISE curriculum keeps up. "The ISE department continues to adapt its curriculum all the time so that our students have specific skills and are able to continue lifelong learning," she said.

She added, "We updated our programming requirements to focus on Python, added courses on AI, data analytics and sustainability and created a Data Science Certificate for Engineers."

Swann emphasized critical thinking as well. "It is not just the content of the courses, but the ability to perform problem solving and use critical thinking," she said.

Meeting the Demands of a Transforming Economy

The job market is shifting. By 2030, experts predict 170 million new jobs and 92 million losses. This results in a net gain of 78 million.

Technology drives this change. Careers in AI, big data, cybersecurity and green energy are growing fast.

Industries like manufacturing, finance, logistics and healthcare rely more on digital systems. These sectors need engineers who can design smart systems and lead with data. OR and ISE graduates are ready to fill those roles.

Mayorga said students gain real-world experience early. "Students can participate in research projects through independent studies but they can also do internships during the summers," she said.

Many students now intern in data science across fields such as defense and healthcare.

Swann said ISE students gain hands-on practice in other ways too. "Many students choose to do a high-impact experience like an internship," she said. "ISE offers courses related to automation that have physical labs for hands-on learning."

She continued, "Students in logistics optimization and sustainability study real-world cases. In healthcare, our two-course sequence includes projects with nonprofits and health organizations."

According to Swann, "ISE students in healthcare are helping those systems become more efficient and effective, even before they graduate."

Future-Proofing Skills for the Decade Ahead

As AI, automation and sustainability grow, engineers must lead change — not just follow it.

OR and ISE programs give students the tools to do both. Mayorga said, "The core OR principles such as systems thinking, modeling and analytics will continue to be a core strength of our graduates."

She added, "As industries evolve and continue to integrate AI, they will need to redesign the workflow not just implement new IT. Our alumni are well positioned to transform workflows and successfully manage change."

The Future of Jobs Report 2025 supports this. While some jobs will disappear, AI will also create many new ones. Workers who understand how to connect human and machine systems will succeed.

Swann said ISE graduates bring flexibility to any career. "One of the beautiful things about the ISE discipline is the flexibility it provides graduates for their career," she said.

She explained, "We have alumni who work in supply chains, healthcare, manufacturing, optimization, analytics, sustainability, consulting, automation and more."

Swann added, "Our graduates know how to examine systems, then improve processes to get better results. That part is not changing."

Looking ahead, she sees key growth areas. "I anticipate a greater focus on ISE professionals in data analytics, change management with AI and ML, sustainability and resilient supply chains," she said.

"The people-focus of ISE students and graduates helps throughout the varied careers that result from an ISE degree."

Shaping the Future, Not Just Preparing for It

Some students may feel unsure about their future careers. That's normal. However, OR and ISE programs build both confidence and capability.

These programs do more than teach technical skills. They train students to lead and think critically.

Swann also pointed to real value behind the degree. "The UNC system conducted a Return-on-Investment analysis of over 600 undergraduate programs and found that degrees in industrial engineering had the 7th highest ROI out of the 600 programs," she said.

OR and ISE graduates will help create smarter, stronger and more connected systems. They're not just preparing for the future — they're designing it. ■

AWARDS and HONO

DEVON PERSON

DEVON PERSON, Outstanding Young Alumnus and advisory board member, received a 2024 Winston Under 40 Leadership Award from Greater Winston-Salem Inc. and the Winston Under 40 Young Professionals Program. This honor highlighted Person's exceptional leadership, career achievements and dedication to giving back to his community.

TRACY DOAKS

PATRICK MURRAY

PATRICK MURRAY, Distinguished Alumna and advisory board member, received the President's Lifetime Achievement Award from NC State University. Murray's contributions span over six years, during which he co-taught classes, prepared students for career fairs and recruited judges and sponsors for design projects. He also mentored students, supported faculty and recruited senior design sponsors.

JORDAN KERN AND SARA SHASHAANI

YUNSOO HA

YUNSOO HA, Ph.D. student, won second place in the 2025 Pritsker Doctoral Dissertation Award hosted by the Institute for Industrial and Systems Engineers. The Pritsker Award recognizes outstanding research in industrial engineering by a Ph.D. student.

ROHAN SHIRWAIKER

ORS

TRACY DOAKS, Distinguished Alumna and advisory board member, received the Distinguished Engineering Alumni Award from NC State's College of Engineering. This honor celebrates graduates who excel in engineering and bring distinction to the University.

JULIE SWANN, department head, received a fellowship from Drexel University's Executive Leadership in Academic Technology, Engineering, and Science Program. This organization supports senior women faculty and allies of all genders in taking on leadership roles in STEM fields.

Swann has also been appointed Interim Assistant Vice Chancellor (AVC) for the Research Computing and Data for Research Computing and Data (RCD) for a 12-month term to assist in leading the creation of the RCD unit within the Office of Information Technology.

JULIE SWANN

JORDAN KERN and **SARA SHASHAANI**, assistant professors, received a 2024-25 Goodnight Early Career Innovators Award from NC State's Provost Office. The award supports early career faculty excellence and promotes retention of tenure-track assistant professors whose scholarship is in STEM or STEM education.

SARA SHASHAANI

SARA SHASHAANI, assistant professor, received a 2025 Early Career Fellows Award from the Society for Industrial and Applied Mathematics (SIAM) and Mathematically Gifted & Black (MGB). This fellowship honors early-career applied mathematicians, especially those from underrepresented racial and ethnic groups.

BRANDON MCCONNELL, associate research professor, has been chosen by NC State to represent the university in the 2025 ACC Academic Leaders Network. This prestigious program focuses on developing leadership skills and fostering collaboration among academic leaders across ACC universities.

BRANDON MCCONNELL

ROHAN SHIRWAIKER, James T. Ryan Professor, has been selected for the 2025 Technical Innovation in Industrial Engineering Award by the Institute of Industrial and Systems Engineers. This award honors a single innovative technical contribution to the industrial engineering profession.

MARIA MAYORGA

MARIA MAYORGA, Goodnight Distinguished Chair in Operations Research, has been selected for the 2025 UPS Minority Advancement Award by the Institute of Industrial and Systems Engineers. This award recognizes individuals who, through innovative means, have developed programs or projects directed to the advancement of women, minorities or individuals with disabilities in the field of industrial engineering.

JINGYAN DONG, professor, has been selected for a 2025 Fellow Award by the Institute of Industrial and Systems Engineers. This award recognizes outstanding leaders of the profession who have made significant, nationally recognized contributions to industrial and systems engineering.

JINGYAN DONG

JULIA ABATE

DANIELLE LEWIS, senior, received the Dwight D Gardner Scholarship from the Institute of Industrial and Systems Engineers. This award recognizes undergraduate industrial engineering students for academic excellence and campus leadership.

DANIELLE LEWIS

ANDRES ALLEGRE TREVINO

YUHAN HU, **JINGWEI QIAN**, **HENRY SSEMBATYA**, **NAIMUR RAHMAN CHOWDHURY**, **EDRIC PHAM**, **VASUKI GARG**, **HOU-AN CHEN**, **JATIN CHAUDHARI**, ISE Ph.D. students, received second place in the Ph.D. Student Video Contest sponsored by INFORMS. Their video was titled "Why Did You Pursue Your Ph.D.?"

ISE PH.D. STUDENTS

JORDAN KERN, assistant professor, was promoted to associate professor by NC State University.

REN LU, Ph.D. student, won Ph.D. second place at the three-minute thesis pitch competition at the IISE Doctoral Colloquium. For this competition, Lu had 3 minutes to pitch his dissertation research to a non-technical audience.

REN LU

AW

JULIA ABATE, Executive Director of the Ergonomics Center, has been selected for a 2025 Fellow Award by the Institute of Industrial and Systems Engineers. This award recognizes outstanding leaders of the profession who have made significant, nationally recognized contributions to industrial and systems engineering.

OLA HARRYSSON

OLA HARRYSSON, CAMAL Director, has been selected for a 2025 Alumni Association Distinguished Graduate Professorship Award by NC State University. This award recognizes outstanding graduate-level teaching at NC State University.

ANDRES ALLEGRE TREVINO, junior, received a Council of Fellows Scholarship from the Institute of Industrial and Systems Engineers. This award recognizes undergraduate industrial engineering students for outstanding academic performance and leadership.

LEXY BOUDREAU

LEXY BOUDREAU, junior, received the UPS Scholarship from the Institute of Industrial and Systems Engineers. This award recognizes female undergraduate industrial engineering students for academic excellence and campus leadership.

JORDAN KERN

OSMAN OZALTIN, associate professor, was promoted to professor by NC State University.

OSMAN OZALTIN

VARDS and HONORS

Monica Morgan never planned to work in higher education fundraising. She first thought she would go into sports marketing. But a last-minute opportunity changed her career, and 12 years later, she is still fundraising. Now, she serves as NC State's director of philanthropy for the ISE Department.

Morgan grew up in Philadelphia and remains a devoted fan of her hometown teams. "Big Philly sports fan—Go Birds!" she said. She and her husband moved to North Carolina 7.5 years ago without ever visiting first. "We absolutely love the state. Mountains, beach, lake—it's beautiful! We got married here and are raising our family here," Morgan said.

Her journey into fundraising started unexpectedly. While studying at a small liberal arts college (Franklin & Marshall College), she interned with the Lancaster Barnstormers, a minor-league baseball team. "I thought I would go into sports," she said. But after seeing the long hours required, she changed her mind. At the same time, she volunteered with her college's alumni relations office, helping with events like homecoming and reunion weekends. Just before graduation, the director of alumni relations offered her a role in annual giving. "I was hesitant about asking people for money, but it was the only job lead I had!" she said. That opportunity led to a long and rewarding career in philanthropy.

Now at NC State, Morgan looks forward to connecting with ISE alumni and learning about their careers. "The land-grant mission and all the ways NC State helps communities in all 99 counties really drew me in," she said. "I love hearing alumni stories and

learning about the different career paths they've taken. So many have used their engineering degrees in unique ways."

Her plan as director of philanthropy is simple: "Get out there and meet as many folks as I can!" she said. She also wants to show alumni the many ways they can get involved with the department, whether through mentoring students, supporting research or contributing financially.

As she settles into her new role, Morgan is excited to strengthen the bond between ISE alumni and the university. With her passion for building relationships and her dedication to NC State's mission, she is ready to make a lasting impact. ■

Want to Welcome Monica to ISE?

You can contact her at **mkmorga4@ncsu.edu** or 919.515.8888.

FOUNDATIONS

DONOR LIST

The Edward P. Fitts Department of Industrial and Systems Engineering at NC State is grateful to our donors for their generous support. This list represents donations between **July of 2024 and June of 2025**. While we make every effort to be accurate and thorough, it is possible to accidentally omit or misspell a name. Please contact 919.515.7237 with any additions or corrections.

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Gregory Raschke
Cheryl and Ron Raugh
Amy and Richard Reamer
Rebecca Register
Yongfu Ren
Phillip and Shannon Renfrow
Mike and Vickie Rhoney
Steve and Linda Roberts
Rod and Mary Robinson
Bill and Teresa Roby
Russell and Cindi Rockwell
Pam Roebuck
Allison and Richard Rosselle
Hal and Donna Routh
Gibson Russell
Dhinesh and Jayshree Sadhwani
Tiffany Sargent
Gary Schweizer
Kim Setser
Gauravkumar Shah
Paul Sheaffer, II
Boyce and Laurie Sherrill
Suraj Kumar Shetty
Rohan Shirwaiker and Bhakti Rane
Lauren Siegel
Tony Sigmon
Nancy Sigmon
Bill and Cindy Sigmon
Bill and Elizabeth Simmons
Wallace and Sherron Sizemore
Julie and Lee Skipper
Rick Sloop
Gordon and Louise Smith
Andy and Louise Smith
Stephen and Joanne Smith
Matthew and Marguerite Smith
Dan Solomon
Shruthi Soora
Adam and Melanie Spainhour
Randall and Carol Spencer
Barry and Cynthia Squires
Ed and Elizabeth Stack
Nick Steinlage
Julia and Kenneth Stevens
Jeffrey and Ellis Stikeleather
Nathan Strickler
Gene and Bea Strupe
Shannon and Todd Stucker
Anna and Brad Sullivan
Natalia and Rett Summerville
Daniel Sutter
Jake Sutter
Julie Swann
Ann and Bob Szabo
Javad and Pamela Taheri
George Tan
Danita Taylor
James and Christina Taylor
Brian and Tammy Teer
Rebeca Teran
John and Rebecca Thomas
Aaron Thomas
Dale and Susan Thomas
Fredrick Thomas
Gary and Pennie Thrower
Timothy Trainor and Donna Brazil
Scott and Roslyn Troutman
Philip and Andrea Tseng
Victor Unda Vila
Wanda Urbanska
Randy Vad
Jennifer Viets
Nita and Jason Vila-Parrish
Doug and Sheree Vodicka
Richard and Barbara Wagner
Mike Walsh, Jr.
Bonnie and Curtis Walston
Pu Wang and Tao Hong
Weihu Wang
Craig and Martha Wardlaw
Katie and Trevor Wassell
Ray Watson, Jr.
Buddy Weaver
Maxwell Webber
Chuang Wei and Lingjiao Qi
Heather and Philip Weinstein
Ed Weisiger and Betsy Fleming
Lauren Welch
Robert Welch
Ed and Sue Welch
Karen and Steven Welton
Ed and Kathy White
Deborah and Ed Whitehorne
Rick Wicker, Jr.
Brooke Wilner
Lewis and Pamela Wilson
Jim and Margaret Wilson
Craig and Suzanne Wilson
Jeffrey Windland and Linda Jurjans
Timothy and Marsha Winstead
Lelon and Marybeth Winstead
Elisa and David Wolf
Stephen and Amy Worth
Shuohao Wu
Sam Wurst
Kathleen and Thomas Wynegar
Kanishk Yadav
Amy Yee
Debbie and Gary Young
Jorge and Nancy Young
Andrea Zamudio
Jianlei Zhang

ADVISORY BOARD 2025

Board Chair's Notes - October 2025

As we begin a new year with the ISE Advisory Board, I want to take a moment to reflect on where we've been and where we are headed.

First, sincere thanks go to Jeff Johnson, who has served with distinction as chair. His steady leadership guided the board through important initiatives and strengthened connections between our department, students, and alumni. While Jeff steps out of the role, we are grateful he will continue sharing his insight and experience as past chair.

We also extend deep gratitude to members rolling off the board—Tony Blevins, Damon Butler and Dave Parker. Your time, energy, and contributions have shaped the department's progress, and your impact will be felt for years to come. The Advisory Board thrives because of individuals like you who give so generously of their expertise.

At the same time, we warmly welcome new members: David Cornejo, Spencer Thompson, Jonathan Drum and Pinar Keskinocak. Each brings unique perspectives and experiences that will enrich our work and energize the board moving forward.

Looking ahead, one of our top priorities this year is engaging alumni. We want to understand the skills graduates use in the workplace, which parts of the ISE curriculum have been most valuable, and what knowledge future graduates will need. We are especially interested in how technologies such as artificial intelligence are shaping ISE roles and what that means for the curriculum.

We also hope to connect with alumni in meaningful ways. Sharing insights, mentoring students, sponsoring projects, or offering career guidance are all impactful. Your time, experience, and voice are vital in strengthening the bond between ISE and its graduates.

Together, we have an exciting year ahead. Thank you for your continued support of NC State ISE, and for helping us prepare students to lead in a world that demands innovation, resilience, and impact.

Candance Gingles, BSIE 1987

Candance Gingles
BSIE, NC State 1987

Director of Quality Engineering at Pfizer

The ISE Department receives valuable input from its advisory board. The board maintains and fosters relationships with students, faculty, the Dean of the College of Engineering, the community and alumni. The advisory board meets each semester.

Sheila Benny
BSIE, NC State 1990

ISE Distinguished Alumni 2021

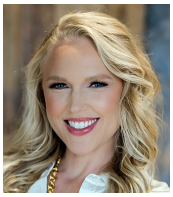
President at Optricity Corporation

Neil Brittain
BSIE, NC State 1994

Senior Director, Human Resources at Gilead Sciences

David Cornejo
Ph.D., NC State 2015

Director of Data Science at GSK



Lisa Cook
BSIE, NC State 2013

ISE Outstanding Young Alumni 2024

Enterprise Data Management Executive

Tracy Doaks
BSIE, NC State 1995

ISE Distinguished Alumni 2016

President and CEO of MCNC

Jonathan Drum
MSIE, NC State 2005

Technical Program Manager at Google

Tao Hong
Ph.D., NC State 2010

ISE Outstanding Young Alumni 2022

Distinguished Professor, UNCC

Jeff Johnson
BSIE, NC State 1978

ISE Distinguished Alumni 2017

Owner of JWJ Energy

Pinar Keskinocak
H. Milton and Carolyn J. Stewart School Chair and Professor

Angela Lanning
BSIE, NC State 1992

COO, Premier's Informatics and Technology Services Group

Tim McMahon
BSIE, NC State 1986

Managing Director, Accenture

Tammy Montgomery
MIMSE, NC State 2011

Specialist Master, Deloitte

Patrick Murray
BSIE, NC State 1988

Director, Global Consumer Sales Development, Intel Corporation (Retired)

Keith Nichols
BSFMM, NC State 1991

ISE Distinguished Alumni 2023

VP, Century Furnituture

Devon Person
BSIE, NC State 2010

ISE Outstanding Young Alumni 2021

VP of Supply Chain at Hanesbrand

Rich Rosselle
MBA, NC State 2013

ISG Global Supply Chain Strategy Director at Lenovo

Natalia Summerville
Ph.D., NC State 2012

Data Science Director, Memorial Sloan Kettering Cancer Center

Spencer Thompson
MIMSE, NC State 2016

Lead Engineer of Environmental Technology at EOS North America

Anita Vila-Parrish
Ph.D., NC State 2010

ISE Outstanding Young Alumni 2022

Sr. Manager of Product at Amazon Pharmacy

ALUMS UNITE!

In 2015, the ISE Department started a private, alumni-only LinkedIn group to give ISE, OR, IMSE, EO, FFM and MEM students, alums, faculty and staff a place to communicate and keep up with what is going on with the programs.

Over the years, it has grown to more than 1575 members who are:

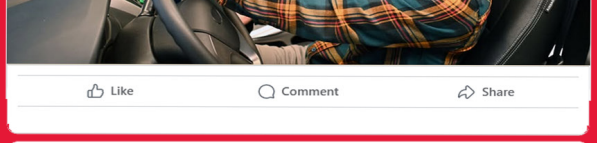
- Networking with each other
- Posting job opportunities for their fellow alums
- Sharing work and personal success stories
- Asking work and school-related questions
- Asking for and sharing career advice

ARE YOU A MEMBER?

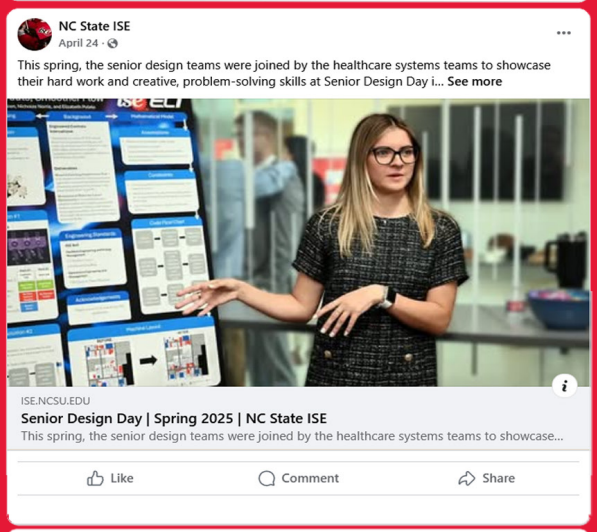
If you are an alum, student, faculty member or staff member who has yet to join the group and would like to take advantage of the benefits that the group provides, visit **https://www.linkedin.com/groups/8285397/** and click on the **JOIN** button. Once we quickly verify each request, you are ready to start.

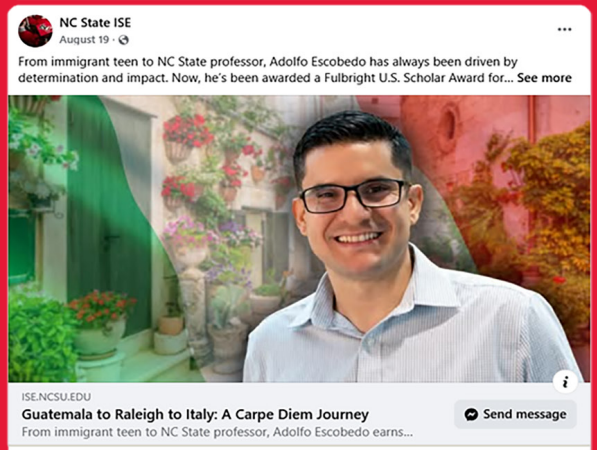
ARE YOU A FRIEND OR PARTNER OF THE PROGRAMS?

First, thanks for your support. Second, we would love to have you as a member of our ISE LinkedIn page, **https://www.linkedin.com/school/9403353/**. Click the **FOLLOW** button in the upper right-hand corner, and you are in. No approval is needed.



Like Comment Share





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The student team meets with you to discuss the scope and details of your project

The students work in your facility to gather data and assess the situation

They present their solutions to key personnel within your organization

Is your company missing a golden opportunity?

Savvy companies are always looking to do more with less and maximize opportunities. Whether that is cutting costs, streamlining processes or ramping up production to meet demand, many of these innovative companies turn to invest in a senior design project to solve these challenges.

The NC State Industrial and Systems Engineering (ISE) Senior Design Program is an opportunity to complete a short-term project — perhaps a project sitting on the shelf or something that needs skills that are not available inside your organization. Sponsoring a senior design project is nothing but beneficial to your company.

This program is only possible because of your sponsorship. While there is a nominal cost to participate in senior design, it is minuscule compared to the cost benefits you receive from the project while also having access to our best students and faculty members. So, why are you waiting?

Let's get started!

go.ncsu.edu/ISESeniorDesign