



EDWARD P. FITTS DEPARTMENT OF
INDUSTRIAL AND SYSTEMS ENGINEERING

NC STATE

Engineering

in Gear

Fall/Winter 2022

WORLD CHAMP OF CHEESE

See how Abby Lampe applied her ISE knowledge to become the world champion of one of the most bizarre sporting events on the planet.

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Degrees Offered

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- Accelerated Bachelor/Master of Industrial Engineering
- Master of Industrial Engineering
- Master of 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 of Operations Research
- M.S. in Operations Research
- Doctor of Philosophy in Operations Research

Integrated Manufacturing Systems Engineering

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



Degrees Granted (2021-2022)

82 Undergraduates
52 Masters
14 Ph.D.



National Rankings

Undergraduate Program: **#15**

Graduate Program: **#16**



Faculty (2021-2022)

25 Tenured and Tenure-track
6 Distinguished Professors
7 Professors
7 Associate Professors
5 Assistant Professors
6 Lecturers
12 Emeritus
14 Adjunct



Enrollments (2021-2022)

326 Undergraduates
133 Masters
74 Ph.D.

inGear

Fall/Winter 2022

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Director of Undergraduate Programs

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FROM THE DEPARTMENT HEAD

When it comes to our alums, I think it is fair to say that we have quite a few success stories. As you will see throughout this magazine, we have presidents, CEOs, captains of industry, distinguished faculty and a YouTube celebrity. But now we can add one more to that impressive list—a world champion cheese racer. Abby Lampe, who just graduated in May, traveled halfway around the world to compete in one of the world's oldest and most bizarre races. If this doesn't prove that you can apply your ISE skills to any situation, I don't know what will. See how she did it on page 18. Congratulations Abby!

I also want to share my congratulations and thanks once again to our alums, faculty, staff, students and friends for your generosity at this year's Day of Giving. Again, we had a friendly competition amongst the other engineering departments and finished second behind Civil Engineering for the most gifts. That is no small feat considering the size of each department's alumni base. Your 181 gifts totaled \$61,275 and allowed the Department to support our student organizations, build research collaborations in new areas and provide scholarships for K12 summer camp in ISE. Your support for ISE and our students always warms my heart. Thank you.

I want to keep the—as the students say—positive vibes going by sharing more of the departmental successes over the last year. Several alums received both local and national recognition for their achievements, which for one alum included making the NFL's All-Pro Team. See, you literally can take your ISE skills anywhere. We have had multiple students receive awards from national organizations, including five students who received scholarships



from the Institute of Industrial and Systems Engineers and two from SME. You can see these and many more in our Awards and Honors section starting on page 10.

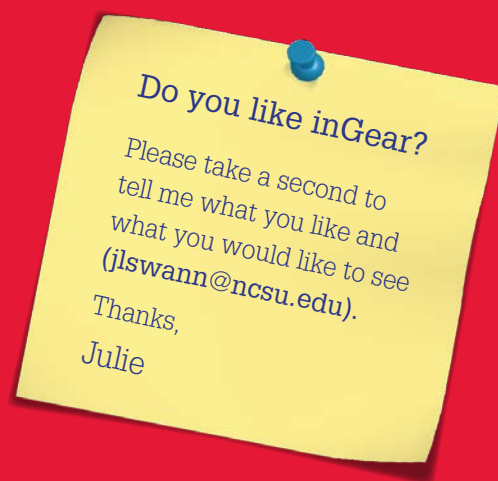
As you may have heard, the College of Engineering's plan for expansion received \$50 million from the state. These funds will allow the College to expand from 10,000 students to around 14,000 over the next five years. Although growing the Department's enrollment by 40 percent will come with its own set of challenges, we are excited to be able to provide a world-class education to more students. This growth initiative will allow us to meet the needs of large companies considering moving to North Carolina. All of this will increase opportunities for everyone in the state.

A stylized, handwritten signature of Julie Swann in black ink.

Julie Swann

Dr. Julie Swann

ISE Department Head and
A. Doug Allison
Distinguished Professor



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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 ... **ANITA VILA**

Hometown: Boca Raton, Florida
Graduating Class: BSIE 2001, Ph.D. 2010
Career Overview: Anita Vila is a product management leader at Amazon Pharmacy. Before this role, she was the Senior Director of Product for the Precision Medicine, Research and Clinical Decision Support Portfolio at McKesson. She has over 15 years of experience in healthcare, including research innovation grants, analytics, consulting and software delivery. Before her healthcare experience, Anita was a product development engineer at Dell Inc., launching laptops globally.

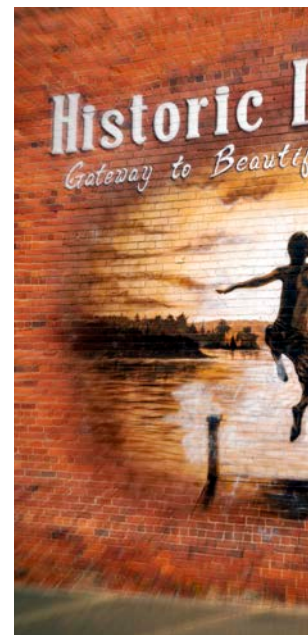
What is the single most important experience or understanding you gained in the ISE department? There are so many fundamentals of ISE that have influenced my career and thinking. If I had to pick one it would be the understanding of stochastic processes—it's so important to recognize the complexities of decisions due to ever changing factors. However, I wouldn't be an ISE if I didn't love the challenge of taking those realities and coming up with the simplest solution.

What is the most pressing issue facing human society that engineers should be working harder to solve? I am probably biased but I have to pick healthcare. It's been 15 years since I started my work in healthcare. If you work backwards from a patient, caregiver or clinician an ISE would be hard pressed not to find an opportunity, whether that be disease and treatment modeling, operating room scheduling, hospital supply chain management, I could go on and on.

What would you like to accomplish in your career? What are you most proud of so far? My career has not taken a pre-planned or typical path but a common thread is my focus on building and supporting teams to grow professionally and deliver amazing results. I am really proud of what my teams have accomplished to launch new health businesses and while at NC State mentoring countless students as they navigate undergraduate and graduate programs.

If you were not in the engineering field, what would you likely be doing? That is a tough question since I've been in many fields while still being an engineer! I think I would have found my way into healthcare or education through a non-engineering path. I am mission driven and those are to areas that I am passionate about.

What advice do you have for current ISE students? You don't have to know what you are going to do 5 or 10 years from now. Find opportunities where you can learn and be curious, inspire you to deliver results, be authentic, and surround you with others that support your career growth. This mental model has served me well in navigating my career.





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WORLD CHAMP OF CHEESE

See how Abby Lampe applied what she learned at NC State to become the world champion of one of the most bizarre sporting events in the world—the Cooper's Hill Cheese Rolling and Wake.



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THEY PUT THEIR MONEY WHERE THEIR HEARTS ARE

Throughout their careers, Ed and Deb Fitts have dedicated their resources to expanding educational success. They believe education and an entrepreneurial spirit is what it takes to restore Ed's hometown and ensure its future.



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LEAN MANUFACTURING ON STEROIDS!

Rick Coffey reinvents domestic furniture manufacturing at McCreary Modern

By Wanda Urbanska

Rick Coffey is the president of McCreary Modern and an ISE Furniture Manufacturing and Management, Class of 1978.

When most people have written off domestic furniture manufacturing, McCreary Modern Inc. in Newton, NC, is not only thriving but expanding. Company President Rick Coffey, ISE Furniture Manufacturing and Management Class of 1978, has combined lessons from NC State University with 40-plus years of industry experience to create a new model that delivers remarkable results. The company produces high-end, private-label furniture for companies such as Room & Board, Crate & Barrel, Arhaus and Anthropologie in all six North Carolina-based manufacturing plants. It is gearing up to open a seventh to keep up with demand.

With McCreary Modern founder, owner and marketing wizard Bob McCreary, Coffey operates a profitable, debt-free business without the glitz and glamor of many successful operations. They have created a singular model combining old-fashioned concepts such as producing a quality product based on a foundational commitment to employees, the community, the environment, customers and suppliers with state-of-the-art technology and systems. An

employee stock ownership plan (ESOP) business, McCreary Modern employees own 30 percent of the company.

Coffey says that the company's original equipment manufacturer (OEM) vertically integrated manufacturing model is "truly unique" in the industry. "We have embraced technology, continuous improvement and change management with an extremely flat organizational structure. We have coined the phrase, 'Lean Manufacturing on Steroids!'" Most organizations "cannot conceive of managing a business with as few salaried employees."

A consultant recently told Coffey that McCreary Modern needed "to start acting like a \$200M company," he says. "I thought to myself: Dead wrong. We need to keep acting like a \$20M company." To that end, the president's office at Newton Campus Plant #1 is spacious but is entirely without pretense. Its walls are dressed with bricks and brown wood paneling circa 1983. Coffey recently opened a closet door to reveal the fixings for his usual lunch: Jars of peanut butter and jelly and a loaf of sliced bread. He pulls a

water bottle from his minifridge to offer a guest. The minifridge he brought to NC State as a freshman back in 1974 is now adorned with Wolfpack bumper stickers and memorabilia. "Why replace it?" Coffey says, a twinkle in his eye. "It works and takes me back in time to when it was packed with beverages you think of when you go to ball games."

The brilliance of the McCreary Modern approach has come into laser focus during the pandemic, with its surfeit of supply-chain disruptions. Because of the company's long-standing allegiance to its suppliers, it wasn't affected nearly as much. "We have a true partnership with our suppliers that goes beyond price," says Coffey. For instance, a sewing thread factory in nearby Marion, NC—forty-five miles down the road—owes its survival to McCreary Modern, its largest customer. In turn, the company expects and receives "exceptional service, just-in-time delivery, weekly follow up and competitive pricing."



Question: When you consider the industrial engineering field — supply chains and systems improvements — which aspects of your education are top of mind as you have built your successful career and McCrearyModern?

Rick Coffey: My experiences at NC State were fundamental to my ability to observe, analyze and adapt different manufacturing environments to eliminate waste and drive continuous improvement. The most important aspect of my education was never to stop learning. In my lifetime, we have experienced a paradigm shift in manufacturing. We have evolved from economic order quantities to made-to-order, one-piece flow manufacturing. The engineering skills acquired at State have served me well during my career. Understanding processes, systems and human nature are paramount to making good decisions.

Question: Do you think that domestic furniture manufacturing can stage a

comeback? If so, what factors may contribute to this?

Rick Coffey: Yes, and for some family-owned and focused upholstered manufacturers, it never left. McCreary Modern is unique due to the fact we are one of the very few OEM manufacturers. In other words, we are not a brand and therefore do not carry the marketing and sales overhead traditional companies do. This allows us to pass extraordinary value to our customers. Secondly, ocean freight has increased dramatically over the last couple of years, leveling the playing field for domestic, fully assembled, custom-upholstery manufacturers. Lastly, I do not see domestic case goods returning significantly due to the tremendous investments required in building and machinery. Most large companies that competed in this arena sold off their manufacturing infrastructures when offshoring was the rave.

Question: Share your approach to working with your suppliers.

Rick Coffey: McCreary Modern is extremely loyal to our vendors and has integrated paperless electronic ordering systems to streamline the supply chain. We focus our purchasing on domestic suppliers. We knew to survive and thrive, we must have a strong local supplier base. This has enabled several key suppliers, like thread and metal fabricators, to keep their operations open and expand because of our commitment to them.

Question: What advice would you give to others seeking to emulate your success?

Rick Coffey: Question everything when taking on new opportunities. Every operation has its unique positives and negatives. Embrace

the positives and create a culture of continuous improvement. Use every opportunity to learn every aspect of your organization. Never assume that operations or methodologies are universally transferable from one business to another. Empower management and hold them accountable for every part of the business. Decentralize functions like engineering, quality assurance, HR and purchasing.

Question: What were the most important lessons—and most memorable moments—from your ISE education?

Rick Coffey: I would be remiss if I did not mention the Head of the FMM Department, Dr. Prak, Mr. Eckwall, Tom Stewart, and especially Ed Clark. Our classmates revered Ed. So much so that our senior class nominated him as the Professor of the Year in 1978. You know what? He won! His influence is felt far and wide to this day!

Question: What's a "fun fact" about yourself and bleeding Wolfpack Red that you'd like to share with us?

Rick Coffey: Our family has supported Wolfpack student-athletes since 1970. We have had virtually the same seats at Carter Finley since that time. My brother Gary Coffey (ISE/FMM) 1974; sister Kelia Coffey (Business Management & Economics) 1981; and daughter Kirsten Coffey (Elementary Education) BS 2012; all graduated from NC State. Kelia played basketball for Kay Yow in the 1970s. We are definitely Red and White for life! ■

ISE INDUCTS FIVE INTO HALL OF FAME

The ISE Department welcomed its first class of Distinguished Alumni in 2006. Since then, it has inducted many of its best and brightest into its Hall of Fame. Starting in 2018, that group began including Outstanding Young Alumni award winners. This year, the department inducted three Distinguished Alumni — **Sheila Benny**, **Patrick Murray** and **Ed White** — and two Outstanding Young Alumni award winners — **Zohreh Asgharzadeh Talebi** and **Devon Person** — during the University's Red and White Week Celebration.



SHEILA BENNY

Distinguished Alumni

As co-founder and president, Sheila Benny has led Optricity Corporation since 2005. The NC State Alumni Association designated Benny as a 2006 Outstanding Young Alumnus after serving eight years on the Alumni Association Board of Directors, providing leadership to the Caldwell Fellows Scholarship Committee and working on the steering committee for the Campaign for Excellence. She received her bachelor's in industrial engineering in 1990.



PATRICK MURRAY

Distinguished Alumni

Patrick Murray earned his BSIE from NC State in 1988. Including his time as a co-op, he spent 30 years at Intel Corporation. As a retiree, Murray started volunteering at the ISE Department as an alumni-student mentor and working on special projects for the department head and the advisory board. In the Spring of 2020, he began serving as an Industry/Executive coach supporting ISE undergraduate students in their senior design engineering class.



ED WHITE

Distinguished Alumni

Ed White is Chairman of the Board and CEO of Field2Base, Inc., a Morrisville, NC-based technology company that uses tablet computers, wireless communications and Field2Base software to support mobile forms automation for various vertical markets. He is also the founder of White Ventures LLC, a private equity and commercial real estate development company. White graduated with a degree in Engineering Operations and is the past president and member of the University's Engineering Foundation's Board of Directors.



ZOHREH ASGHARZADEH TALEBI

Outstanding Young Alumni

Zohreh Asgharzadeh Talebi is a researcher and a senior manager of Advanced Analytics R&D at SAS institute. She received her Master's and Ph.D. in Operations Research from NC State University. Asgharzadeh Talebi is committed to NC State with her involvement in Goodnight Scholars' Night, resume review sessions and career fair prep sessions with the ISE Department over the years. She has been an invited speaker for the SME and IISE student organizations.



DEVON PERSON

Outstanding Young Alumni

Devon Person is the Director of Supply Chain for Hanesbrands. Before joining Hanesbrands, he held director-level roles with three other Fortune 500 companies, including GE and Eaton. Person earned dual Bachelor's degrees (2010) in Industrial and Systems Engineering and Textile Engineering before earning a Master's degree (2014) in Supply Chain Management from Penn State University. He has also acquired certifications in lean manufacturing, 6-sigma black belt, CPIM from APICs and executive leadership training from McKinsey consulting.

WATCH THEIR ACCEPTANCE SPEECHES



Watch each of the Hall of Famers give their acceptance speech at the 2021 ISE Hall of Fame Breakfast.

[**go.ncsu.edu/s.benny**](https://go.ncsu.edu/s.benny)

[**go.ncsu.edu/p.murray**](https://go.ncsu.edu/p.murray)

[**go.ncsu.edu/e.white**](https://go.ncsu.edu/e.white)

[**go.ncsu.edu/z.asgharzadeh-talebi**](https://go.ncsu.edu/z.asgharzadeh-talebi)

[**go.ncsu.edu/d.person**](https://go.ncsu.edu/d.person)

ALUMNI AND FACULTY WIN NATIONAL AWARDS

Good things come to those who wait. This expression perfectly describes the ISE department's alumni and faculty. Even though they work tirelessly without a promise of reward or recognition, their dedication and contributions to the industrial engineering field have gotten them noticed, earning them multiple Institute of Industrial and Systems Engineers (IISE) Awards.



Tony Blevins

ISE Distinguished Alumnus and advisory board member Tony Blevins received the **IISE Captain of Industry Award**. This award honors leaders in business, industry and government who have used industrial engineering methods to create significant success for their organization and identify the ISE profession as a key reason for their success.

"ISE is this amazing discipline, where one can have a huge impact on the world and society," explained ISE department head Julie Swann. "Tony's contributions have been crucial to the success of Apple as a company and Apple products. Think about the importance of ISE every time you or a family member use an Apple product, and imagine all the many ways ISE graduates are changing the world for the better."



Candance Gingles

ISE advisory board member Candance Gingles has been honored with the **IISE SEMS Outstanding Management in Industrial and Systems Engineering Award**. This award recognizes engineers who create a managed climate where ISE techniques are utilized with outstanding results. "Gingles is perfect for this award, with her extensive leadership in quality control of pharmaceuticals," Swann explained. "If you or a family member has had an IV bag, there is a significant chance you have benefited from her management of engineers."

Gingles is the Director of Quality Systems and Engineering at Pfizer's Rocky Mount, NC site. As the Director, she serves as the sitewide lead for regulatory compliance, training and quality aspects in the validation and change management of new products, manufacturing technology and continuous improvements.



Maria Mayorga

ISE professor of personal medicine Maria Mayorga received the **IISE Fellows Award**, the highest classification of membership in IISE, recognizing outstanding leaders in the engineering profession. These leaders have made significant, nationally recognized contributions to ISE.

Mayorga is one of NC State's University Faculty Scholars. She works on challenging problems that are important to society, including research on colorectal cancer, diabetes, sepsis, COVID-19 and disaster logistics. Mayorga is a leader within the IISE organization, with achievements such as starting a new student award as president of the Operations Research division and conducting several editorial awards. "NC State is very lucky to have Maria Mayorga, who is also one of the highest-ranking Latinas in our field in the continental US," Swann explained.



Tiffany Sargent

Tiffany Sargent, ISE Distinguished Alumna, also received the **IISE Fellows Award** for her collaboration with others and extensive volunteer work. "She gives freely of her time to ISE, Chalmers University (Sweden), the Institute of Industrial and Systems Engineers, the Society of Women Engineers and the Junior League," Paul Cohen, ISE Edgar S. Woolard Distinguished Professor, stated.

Sargent recognizes this award as honoring her work and celebrating the support she gives and receives from others. "I think of this award as a shared recognition with the people who invested in me or gave me an opportunity to try something new," she said. Sargent wanted to continue to share advice with students and engineers. "Being a technologist and engineer puts you on a pathway to be a lifelong learner," she stated.

Tony Blevins shows his NC State pride with a "Wolfie" at the IISE Honors and Awards Banquet.



AWARDS and HON



JULIE IVY

JULIE IVY, professor, was inducted into the 2022 BRIDGES Academic Leadership for Women Program. Ivy was also inducted as a Fellow of the Institute for Operations Research and the Management Sciences.



ROHAN SHIRWAIKER

ROHAN SHIRWAIKER, professor, has been promoted from associate professor to professor effective August 16, 2022. Shirwaiker also earned a University Faculty Scholar Award from NC State's Provost's Office.



KAREN CHEN

KAREN CHEN, assistant professor, won a 2021-2022 Goodnight Early Career Innovators Award from NC State's Provost's Office.

CLAUDIA DONAHUE, OR graduate student, and **ALEXEJ LOZEVSHKI**, ISE graduate student, won the 2022 Student Simulation Competition sponsored by Simio.



CLAUDIA DONAHUE

MARIA MAYORGA, Professor of Personalized Medicine, received a 2022-23 Provost's Faculty Fellow Award from the Office for Faculty Excellence and the Office of the Executive Vice Chancellor and Provost. Mayorga also received a Fellows Awards from the Institute of Industrial and Systems Engineering.



KANTON REYNOLDS

KANTON REYNOLDS, Director of Undergraduate Programs, won the COE Award for Excellence from NC State.

TABITHA GARDNER, senior, received the 2022 Faculty Senior Scholar Award from the NC State College of Engineering.



TABITHA GARDNER



ALEXEJ LOZEVSHKI



MARIA MAYORGA

ORS



DEBBIE ALLGOOD-STATON

DEBBIE ALLGOOD-STATON,

university business manager, received the Staff Member of the Year Award from the ISE Department.



JUNE TOBIN

JUNE TOBIN,

junior, received the 2022 IISE Council Of Fellows Undergraduate Scholarship from the Institute of Industrial and Systems Engineering.



JEFF JOINES

JEFF JOINES,

ISE alumnus and TECS department head, received the James R. Wilson WSC Board of Directors Award from the Winter Simulation Conference.



NAFI AHMED

NAFI AHMED, Ph.D.

student, received the 2022 IISE Fellows William Biles, Hamid Parsaei and Victor Zaloom Endowed Scholarship from the Institute of Industrial and Systems Engineering.

JULIE SWANN,

department head, was recognized as a Fellow of the American Institute for Medical and Biological Engineering's. Swann was also inducted as a Fellow of the Institute for Operations Research and the Management Sciences.



JULIE SWANN



AMIR HOSSEIN SADEGHI

AMIR HOSSEIN SADEGHI, Ph.D. student,

received the 2022-2023 Lisa Zaken Award for Excellence from the Institute of Industrial and Systems Engineering.



OLA HARRYSSON

JIM WILSON, professor emeritus, and **OLA HARRYSSON,** Fitts Distinguished Professor,

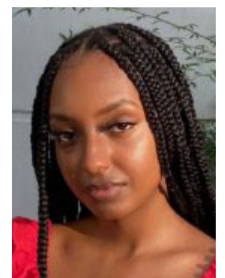
were named to the highly-cited 2022 ADScientific Index as top North American researchers in industrial and manufacturing engineering.



JIM WILSON

HANNAH BEHAILU,

senior, received the 2022 Benjamin A. Gilman International Scholarship Program from the US Department of State.



HANNAH BEHAILU



PAUL COHEN

PAUL COHEN, Edgar S. Woolard Distinguished professor, and **NUR OZALTIN**, teaching assistant professor, (tie) received the 2022 C.A. Anderson Outstanding Faculty in Industrial Engineering Award from the ISE Department. This is the first time that there was a tie for the award in its history and the two recipients couldn't be more different. Cohen received emeritus status this summer while Ozaltin is the newest member of the faculty.



NUR OZALTIN



DANIELLE LEWIS

DANIELLE LEWIS, senior, received a Grand Challenge Scholarship from NC State's College of Engineering and the Division of Academic and Student Affairs.



RASHIDA HODGES

RASHIDA HODGES, ISE Outstanding Young Alumna, earned a 2022 Women in Business Award in the technology division from the Triangle Business Journal.

TRACY DOAKS, ISE Distinguished Alumna, earned a 2022 Women in Business Award in the non-profit leadership division from the Trianale Business Journal.



TRACY DOAKS



TEAM TAPROOT

TEAM TAPROOT, Jackson Law, Ean Lawrence, Hannah Bauer, Meriem Laroussi and Conner Simpson, placed third in the Global TapRooT Summit Student Competition.



PAVEL KOPROV

PAVEL KOPROV, Ph.D. Student, received the 2022 E.J. Sierleja Membership Fellowship from the Institute of Industrial and Systems Engineering. Pavel also received the 2022-2023 E. Wayne Kay Graduate Scholarship from the SME Education Foundation.

SHOHANUZZAMAN SHOHAN, Ph.D. Student, received a 2022 Best Doctoral Symposium Presentation Award from the American Society of Mechanical Engineers at their annual Manufacturing Science and Engineering Conference. Shohan also won the university-level Three-Minute Thesis Competition sponsored by The Graduate School and presented at the Conference of Southern Graduate Schools.



SHOHANUZZAMAN SHOHAN



ZACH TRAYLOR

ZACH TRAYLOR, Ph.D. Sstudent, received the Think, Collaborate and Do Ideation Award from the Comparative Medicine Institute.



CATHERINE RECKARD

CATHERINE RECKARD, senior, received the 2022 Harold and Inge Marcus Scholarship from the Institute of Industrial and Systems Engineering.

ISE FACULTY SPOTLIGHT



SARA SHASHAANI

When people get asked who the most thrilling people in the world are, many say rock stars, pro athletes and celebrities. But according to ISE assistant professor Sara Shashaani, you can add engineers to that list. As the daughter of a mechanical engineer, she grew up watching her father's excitement for solving problems. "From an early age, my father gave me the impression that engineers are the coolest people on earth," confessed Shashaani. But what gives engineers such a distinction? To her, it's the fact that they spend each day solving real-world problems that improve everyone's daily lives. "I can tell you that I hear time and time again from my non-engineer colleagues that it is always the engineers getting things done in the real world," she shared.

Shashaani's story with industrial engineering began in college. She enjoyed learning many topics, from mathematical modeling to how parts get built to human interaction with systems and even economics. She believes that knowing a little about these topics is vital to understanding the "big picture" when analyzing how systems work. During that same time, one of her professors encouraged her to join his research team studying production line scheduling, which she found fascinating. A successful project experience and publication nudged Shashaani towards graduate school at Purdue University. After graduation, Shashaani was ambitious to go out to

the world and make an impact. She received a job offer from a world-renowned automobile manufacturing company. But during the interviews, she quickly realized that the industry's main goal is to increase profit, and it may be acceptable to solve a problem without understanding it well. This reality and the freedom to choose what research areas to invest her time and energy in led her back to academia.

Following a postdoctoral fellowship at the University of Michigan, Shashaani joined NC State in 2019. She chose the Wolfpack because she knew NC State had a popular industrial and systems engineering program. "I had met some of my current colleagues in conferences and found the topics of interest and the vision for where ISE wanted to be in the future very appealing," recalled Shashaani. "My attraction to the Triangle was definitely amplified after my first visit." She found North Carolina to be an underrated and beautiful state and discovered North Carolinians to be very warm and welcoming. "Beyond that, I am inspired by how NC State contributes to the well-being of the state, the nation and the world," she said.

Currently, Shashaani uses data and simulations to enable informed decisions for heavily uncertain infrastructure (energy, water, transportation, health, etc.) systems.

To improve predictions and robustness of these complex systems, Shashaani is also designing algorithms that determine which of the many variables collected are the most important ones for decision-making. With a clear passion for her work, Shashaani offers some advice to anyone considering a research-driven career. "Doing research may not be ideal for everyone because it is tackling a question you cannot guarantee will actually have an answer," she explained. "You will enjoy and be successful at doing research if you have these qualities: being comfortable with not knowing, curiosity, and perseverance when things don't work."

Shashaani believes that "it is time that people with college/higher education build bridges to communities to fight misinformation and increase trust in what science and engineering can offer to build a better world for everyone." At the same time, she is also concerned about problem solvers. "I think as the world throws many reasons at us to be anxious every day, it is becoming increasingly important to take care of our mental well-being," shared Shashaani. "This always starts by asking ourselves, how can I make myself feel better?" If you can relate, she has some tips and encourages you to drop her an email (sshasha2@ncsu.edu) if you would like to chat more. ■



WILLIAMS RETURNS HOME

After graduating from the ISE Department in 2017, student-athlete Ashley Williams sought to continue her education and her involvement in basketball at Indiana University, where she received her master's degree and served as a graduate manager for the Hoosiers before being promoted to assistant coach. Now, after all these years, Williams is coming home.

Williams, a Cary, NC native, started her career as a walk-on and worked her way up to a starter for the Wolfpack by her third year. On the court, she was well-known for her skill at hitting three-point shots. Off the court, she was recognized for her impressive 3.92 GPA. Williams was a two-time College Sports Information Directors of America (CoSIDA) Academic All-District honoree and a three-time All-ACC Academic Team member.

A month after receiving her first CoSIDA honor, Williams became the 8th person to receive the Kay Yow Scholar-Athlete of the Year Awards and headlined the All-ACC Women's Basketball Academic Team. Later that same day, she and the Wolfpack Women's Basketball Team defeated Boston College in the second round of the ACC Tournament.

As a result of her skill and dedication, the ACC gave her the 2017 Weaver-James-Corrigan Award. This scholarship rewards student-athletes who intend to pursue a graduate degree after completing their undergraduate

requirements. Williams received \$5,000 toward her graduate education and was chosen for her performance in the classroom, on the court, and in the community. She used the scholarship to enroll at Indiana University and begin her coaching career.

As a graduate manager at Indiana (2017 - 2019), Williams helped develop the team's guards, including the leading scorers Grace Berger and Ali Patberg, who earned All Big-Ten honors. Perhaps most impressively, Williams was recognized as one of the Women's Basketball Coaches Association's Thirty Under 30 honorees in 2020-21.

After finishing her master's degree in athletic administration, Williams began her full-time coaching career with Furman University. The Paladins earned a fourth-place finish in their league during her year there.

Williams then returned to Indiana and helped the Hoosiers achieve some of the best results in program history. In her first year as an assistant coach at Indiana, the team reached the NCAA Elite Eight for the first time in the program's history, went 21-6 overall and finished second in the Big Ten, the highest regular-season finish in school history. Williams was a part of the team's second-straight NCAA Sweet Sixteen appearance as the team posted a 24-9 record. She helped lead the Hoosiers to the 2022 Big Ten Tournament championship game, their first such appearance in

20 years and their highest-ever NCAA Tournament seed. Luckily for NC State, she decided to bring all of this success and experience home to help coach the Wolfpack.

"We're excited about bringing Ashley back home to NC State," NC State head coach Wes Moore told NC State Athletics. "I've enjoyed watching from afar as she has developed and excelled in her coaching career. She was a great student in the classroom and of the game as a Wolfpack player, and I know she will help foster these same qualities in our student-athletes now." Moore was excited that Williams would bring her passion and energy for the game to the court every day. He also believes that she brings something extra. "Having a former player on your staff that is familiar with your system and way of doing things is always an asset," Moore shared with NC State Athletics.

"I could not be more excited to be back home at NC State," stated Williams to NC State Athletics. "This place has held a special place in my heart for a very long time, and I am thrilled to return to the sidelines in Reynolds Coliseum. Coach Moore is a proven winner, and I can't wait to get to work on his staff. It's a dream come true to be back running with the Pack!" Like Williams, everyone in the ISE Department is excited to have her return to guide the Wolfpack and look forward to a successful first season. ■

GRADUATE STUDENT SPOTLIGHT

PAVEL “PASHA” KOPROV

All children are born innately curious about the world, but many abandon that quest for knowledge as they age. Others become engineers.

Pavel “Pasha” Koprov started his engineering journey as that curious kid who would disassemble remote-controlled cars to see what made them work. He carried that drive for discovery with him into adulthood. “It was a no-brainer for me to go to engineering school, and I have never hesitated nor regretted the major I chose - Computer-Integrated Manufacturing,” Koprov explained.

When Koprov received his master’s degree and began to work in industry, his desire to learn and improve continued to burn within him. “I always hated inefficient and mundane work,” he recalled. “Industrial engineering enticed me with its goals that resemble my own views of how things should be. I realized that I am not a big fan of pure coding, calculating the resistance of materials or designing electrical circuits. Working over the systems and their efficiency is my interest and the direction of my current work - smart manufacturing.”

Koprov had always dreamed of studying in the United States. So he began his search, looking for the highest-rated schools. While exploring his options, he stumbled on a university he had never heard of in a city he didn’t know existed. Luckily, the nearby Research Triangle Park (RTP) also piqued his interest, so he began researching the university further. “After I read about the RTP and searched through NC State’s website, I decided it would be a great place for me to return to school,” Koprov detailed. “Dr. Starly, Dr. Harrysson and Dr. Cohen drew my interest to advanced manufacturing after I read their articles. I knew that I would work under the direction of one of them long before arriving in North Carolina.”

At NC State, Koprov has focused on designing robots and automated systems that can perform dangerous jobs so that human workers won’t be at risk. “My dream job is to make robotics accessible and facilitate human life,” he confided. “There are so many jobs in which people should not be involved, and automation is a good fit.”

As for what he plans to do after graduation, that’s a tricky question. “You want to make god laugh?” he joked. “Tell him about your plans.” After the events of the last couple of years, Koprov understands that even the best plans can change. So until then, he will continue to stay curious and ask questions. ■



Top 4 Reasons Why YOU

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 non-monetary 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. So see all the different ways you can share your expertise and wisdom and get answers to your most

common volunteering questions on 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, Ask the Pack (ask.ncsu.edu/ask-the-pack), allows you to ask a network of 250,000 fellow NC State alum anything to help with your academic or professional development. Ask the Pack will connect you with the best person to help you with advice and introductions.

The second resource is the private ISE/OR/IMSEI/MEM Alumni Group on LinkedIn. With over 1300 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. Our collection of certification and professional learning opportunities is another way to advance career and educational goals. Additionally, you may recall that access to the NC State Library was a great resource during your campus experience. NC State's Friends of the Library program gives you online access and borrowing privileges. Even if you are not a North Carolina resident,

Don't Get Involved

every US state has a similar program to offer its residents access to a broad range of digital resources. We have collected all their information in one spot to use easily.

3. "YOU ONLY CALL WHEN YOU WANT MONEY"

Agreed. You don't want 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. Dedication 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).

"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. Additionally, unexpected opportunities arise that require swift action. Discretionary funds allow the department head to respond quickly to these opportunities and challenges. Over the last few years, these funds have supported: senior design projects, awards recognition for students, new courses and programs, and more. Plus, you can always tell us where you want your donation to go. Not sure how you want to help? Contact Wanda Urbanska (wmurbans@ncsu.edu or 919.515.9976), and she will be happy to guide you through the process. ■



WORLD CHA

OF CHEESE



See how Abby Lampe applied what she learned at NC State to become the world champion of one of the most bizarre sporting events in the world.

After a two-year hiatus, one of the oldest and indeed strangest sporting events returned this summer, the Cooper's Hill Cheese Rolling and Wake. Although the oldest written record of cheese rolling is a message from 1826, it was apparent then that the event was an old tradition. Historians believe it to be at least six hundred years old.

The event gained international recognition on social media, and after it appeared on Netflix's docuseries, *We are the Champions*, in 2020. "I learned about the cheese rolling years ago through seeing it on social media," recalled Abby Lampe, ISE alumna from the spring class of 2022 and a North Carolina native. "I think the cheese rolling race is so bizarre and obscure, which fits perfectly into what I do, so I knew I wanted to participate." "What she does" includes the Krispy Kreme Challenge, which inspired her to participate in the cheese-rolling competition.

"I've been talking about this for a long time," Lampe told NC State's Technician. "Oh, my gosh, a really long time. And even at my graduation dinner with all my family, one of the key talking points was the strategy for the cheese roll."

After graduating in May, Lampe planned to take time off to travel before beginning her new job in the fall. Armed with only a few weeks of Spanish courses, she bravely traveled to Europe with stops planned in Spain, England, Portugal, Greece, Sweden and France. The stop in England was to participate in the cheese rolling race.

Preparing for the Race

Lampe's preparation for the race began with her family back in North Carolina. To prepare for the mental aspects of the race, she strategized with their help, watching hours of cheese rolling videos. She focused on the previous two cheese rolls and applied what she learned to her overall plan. "Industrial and systems engineering is all about finding the optimal and most efficient method of doing things," said Lampe. "As an industrial engineer, being prepared is a must. So, after breaking down cheese rolling videos, I utilized my project management skills and mindset to find the fastest route—a method she learned throughout her ISE classes.

To train for the intense physical side of the race, Lampe tried to find a steep enough hill to match Cooper's Hill to practice her rolling technique. She could not find any in Raleigh, so she used the closest thing she could find: the hills at Dorthea Dix Park, next to NC State's campus. Together with her training

partner—and boss—I SE staff member Jasmine Petway, they took to the hills.

When Lampe first brought the idea of cheese rolling to Petway, let's just say that Petway had some reservations. "I did not understand her enthusiasm



Abby Lampe has the roll of cheese in sight as she starts down Cooper's Hill

or why anyone on the planet would want to put themselves in a dangerous situation," admitted Petway. "But, I forgot we are talking about the adventurous Abby here."

So they grabbed some ice cream and headed to Dorthea Dix for a little walk. They found an open field with some small hills, and Petway suggested they should "test" them out. Lampe went first by trying her strategy of going head first. Petway followed. "I was like the little five-year-old kid rolling on my side with grass everywhere in my hair and clothes," she recounted. It wasn't an even match. Lampe won based on intentionality, passion and strategy. But that wasn't enough for Lampe, who knew her final preparations would take place on Cooper's Hill.

Arriving several days before the big race, Lampe, along with her friend Robert Kobrin—a junior studying biomedical engineering at NC State, to study the course. "His encouragement helped, and he was an excellent sounding board when it came to strategizing before the event," said Lampe. Decked out in the volleyball and basketball elbow and knee pads she brought from home; she secretly took a test run down Cooper's Hill.

The Big Race

The Cooper's Hill Cheese Rolling and Wake consisted of four races, with the women's race going third. So, Lampe watched and recorded the first two races intently. "I am very competitive, so I wanted to see their strategies," she shared. "I also got ready by playing classic American and North Carolina favorites on the way to the top of the Hill," recalled Lampe. "It included Wagon Wheel, Country Roads (take me home) and other classics."

"When we were getting ready to race, I was scoping out who would actually take the competition seriously." At the top of the hill, she noticed that one person kept inching up, so she stayed level with her so she wouldn't be at a disadvantage. "I knew she would probably be one of the stronger competitors, and she ended up second," confided Lampe. "So my intuition was right. I somehow out-rolled her."

Looking down the steep slope, Lampe wasn't fearful but still took time to pray that she wouldn't break any bones and that she would win. "I was more ready to compete and excited than anxious or scared," confided Lampe. "When I looked down the hill, I thought it was incredibly steep, and it became more of a reality."

The starter began the race by counting up, "One to be ready. Two to be steady. Three for the cheese, and we run at four." But Lampe was so excited that

she never heard anything past the word cheese. "I didn't even hear four, but I knew to go when I saw people running after the cheese," she explained. She thought it was going well at the start with her sprint stride, but then she started tumbling. "It hurt a bit, but I knew it wouldn't last very long," recalled Lampe. "My head and body were getting slammed into the ground, and I remember feeling my teeth going into the ground."

Shortly after starting down the hill, Lampe realized she was rolling sideways because she kept getting closer to the crowd, so she tried to reposition herself. "I had no concern for anyone around me," admitted Lampe. "I had no idea where they were. I just went with the rolling. Initially, before the race, I thought I could roll, spring up, sprint more, and bounce up, but that didn't happen. I didn't fight gravity, which was a contributing factor to my win because I won with the momentum of my roll that had been with me since the beginning."

Local rugby players caught her as she rolled across the finish line. "I said, 'Did I win?' and they yelled, 'You are the winner of the cheese rolling!'" I was so shocked. I didn't think I would actually win." A female staffer gave Lampe the cheese, and she raised it over her head and started jumping up and down in celebration. "My dream became a reality, and it all came to fruition," reflected Lampe. "I couldn't believe that the race I had been talking about for months had ended, and I somehow won." Little did she know, the excitement of winning the race was just the beginning.

15 Minutes of Fame

Back in Raleigh, Petway had a calendar reminder to "Check on Abby" on the day of the race. She was a little scared for Lampe's well-being and wanted



to ensure that she didn't break into two pieces. Five minutes before the reminder was to go off, Lampe sent her a text that said, "I WON." When Petway could watch the video a few hours later, her mouth dropped to the floor. "I was shooketh, astonished and mindblown at how she came tumbling down the hill so fast chasing after a roll of cheese," recalled Petway. "My mouth was open for at least ten whole minutes. I texted her, 'OMG, you are a freaking BEAST!' The rest was history. She's famous."

For the first week after winning the cheese roll, Lampe would wake up still not genuinely believing that this was her life. Every day something so surreal would happen. One media outlet after another was reaching out for an interview. First, NC State



Lampe holds up her trophy, a 7 - 9 pound wheel of Double Gloucester Cheese

Barstool posted about her, then NC State. "The number of interviews I did and articles written were so crazy," said Lampe. The governor, Roy Cooper, acknowledged her win. Then the NC Senate. Local North Carolina news

featured her as well. "My grandmother watches the news every day, and she saw me on the news without anyone telling her, recalled Lampe. "She had no idea what I was doing on the news. My grandmother called my sister and asked if I was in England because she didn't want to be making this up. She couldn't believe it—I still can't."

Shortly following the media requests came the endorsement deals. Lampe signed two name, image and likeness deals, one with Iconic Heroes and the other with NC State Wolfpack Outfitters. Both agreements included a part where she would receive proceeds from each sale. Lampe thought it appropriate to give the money to charity. "I only won a cheese rolling race, and making money off that is absolutely nuts," confided Lampe. She asked people to vote for their favorite charity, and the Jimmy V Foundation for Cancer Research won.

The Australian game show, *Have you Been Paying Attention?*, reached out to Lampe to submit a recorded bit. Unfortunately, it didn't make the cut. Still, they donated \$500 to the Royal Children's Hospital of Melbourne, an Australian charity I chose, on my behalf.

Local Raleigh sports radio was throwing around the belief that the win might be the thing to end the "NC State Stuff" curse. Lampe is all for that idea. "I really hope I broke it, and hopefully, this win for NC State and North Carolina is the start of a new beginning. I'm glad I could bring a 'W' home and represent a place that will forever hold my heart." Lampe wants the NC State community to share this victory with her. "Celebrate the big victory, celebrate the little victories," Lampe told the Technician. "It's always a good day to be a Wolfpack fan and knowing that no other school in the US can say that they have someone who is the Cheese Rolling world champion." If her win did indeed break

the curse, it seems fitting that it was accomplished by someone with such an impressive NC State family lineage.

Her Wolfpack Family

Lampe comes from a true Wolfpack Red family. Her great grandfather, J. Harold Lampe, became the dean of the school of engineering in 1945. Her grandfather studied at NC State. Her parents went to NC State, and five of her seven siblings graduated or studied



J. Harold Lampe (Abby's great grandfather) with his family after becoming the Dean of the School of Engineering

at NC State. "Being a Wolfpack fan and going to NC State was just assumed when I was younger," explained Lampe. "I never thought I would go to any other school." But picking a major, however, was influenced by both her uncle, Ross Lampe, and my brother William Lampe. They both graduated with industrial engineering degrees from NC State.

As another member of Lampe's "Wolfpack family," Petway could be happier for her. "I'm super proud of Abby and her accomplishments," she said. "She graduated this year, traveled the world and is living her best life. I love how she's super humble and doesn't let anything go to her head. Keep being the beautiful, quirky and loving being that you are."

So the last question is, "Will you defend your title next year?" Lampe doesn't rule it out. "If my job allows me to take a few days off, I might have to," she confided. ■

THEY PUT THEIR MONEY WHERE THEIR HEARTS ARE

Littleton, NC, is a small town about an hour and a half northeast of Raleigh. Like many small towns throughout NC, its population has dwindled over the years (under 600 residents) as people continue to move away for school or work due to the lack of opportunities in the area. Thankfully for Littleton, a former resident and his wife has returned to restore the town and ensure its future.

ISE alum Ed Fitts was born and raised in Littleton but left to attend college at NC State in 1957. He often returned to his hometown over the decades, only to see it slowly falling into disrepair as businesses closed up and moved elsewhere. This loss really sunk in when The Fittses would pass Littleton High School, where Ed had played football for the Blue Jays. "It pulled at the heartstrings, and we said, 'We can't allow this to just fall apart,'" Deb Fitts told Business North Carolina.

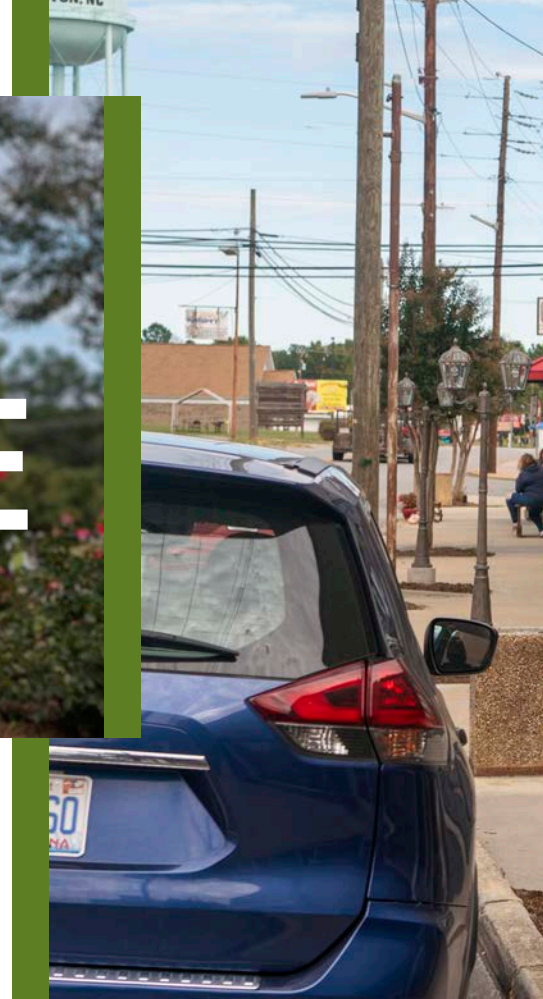
Their philanthropy began when they decided to start helping the town fund simple projects, like purchasing new Christmas decorations for downtown. Then, they became more involved after buying and demolishing dilapidated homes riddled with crime. When the local performing arts center in the Littleton school auditorium needed roof repairs, the Fittses decided to go all in. It was time to restore this once thriving town.

Instead of simply repairing the auditorium's roof, the fittses decided to buy the entire

school and turn it into the new Littleton Academy. As people familiar with the Fittses and NC State University know, they understand the importance of education (See The Fittses and Educational Success below). It would have been cheaper to tear down the building and start over. But for the Fittses, it was more important to preserve the two-story columned building that Ed remembered from his days there in the 1950s. Once the auditorium has been renovated, it will have new seating, lights and sound systems. There will also be a new lobby with a ticket window, bars and offices for staff, and it will seat nearly 300 people.

Littleton Academy will welcome its first students next fall, starting with the elementary students but eventually adding middle and high school students. The school will focus on offering vocational training like heating and air conditioning, and plumbing. This training will enable students to find jobs and start businesses without a college degree. Opening Littleton Academy is critical to the town's success because it has no schools. The nearest public schools are near Roanoke Rapids, about 10 miles from Littleton and even farther from Lake Gaston.

Along with the school, an amphitheater that seats 1,500 guests is included in the plan. The goal of this venue is to draw people from around the region to Littleton. "We hope to have some really strong entertainment for some outdoor events," explained Ed Fitts to Lake, The Magazine.



Left to right: The Blue Jay Bistro, Main Street Wines,

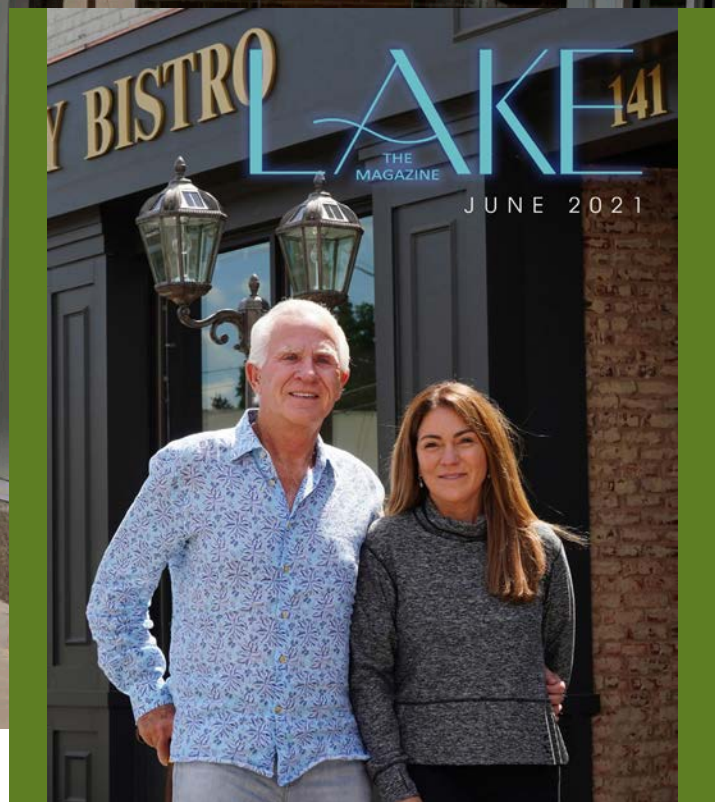
To help people stay in Littleton after graduation and continue advancing their careers, the Fittses have opened businesses on South Main Street. After moving back to Littleton, they realized businesses were missing. "If we're gonna live here, we need a place to eat," Deb Fitts told Business North Carolina. "We just started talking to people. What do you want? What do you need? What do you wish you had?"

They opened three new businesses by renovating storefronts that had been vacant or full of junk for years – Daphne's Coffee Shop, Main Street Wines and the Blue Jay Bistro – to draw people downtown. A brewery is currently under construction to bring more business to the area.

Downtown became an even more popular place by connecting Littleton to the world. The Fittses noticed local kids hanging out behind the town hall. They discovered this location was a rare place to access free Wi-Fi. So, the Fittses provided gigabit Wi-Fi through the downtown area and adjacent neighborhoods through the Ed Fitts Charitable Foundation. Now, businesses and guests can easily access free internet.



Daphne's Coffee Shop and their new neighbor Frank's Fine Art on Main Street in Littleton,



Helping Littleton grow is part of a larger plan to stimulate economic growth in the town. "We're hoping that other people coming in will invest into Littleton," Deb said to Lake, the Magazine. "This isn't just all about us. This project is about trying to show people this is a great opportunity." The Fittses are doing what they do best, helping others to grow and thrive.

The Fittses and Educational Success

Throughout their careers, the Fittses have dedicated resources to expanding educational success. Both have supported NC State philanthropically with gifts like the Edward P. Fitts Scholarship in 1999, the Edward P. Fitts Industrial Engineering Professorship in 2002, A. Doug Allison Endowed Professorship in 2006, and the Dopaco, Inc. Endowed Professorship in 2006. "Our goal remains to be one of the top five industrial and systems engineering programs in the world," Ed Fitts said to the NC State College of Engineering News. "To complete this goal, we need a world-class facility for our students and our faculty to continue to produce world-class students for the state of North Carolina and the nation."

This idea led to the creation of the very first academic department in the history of the University of North Carolina System in 2005 after a gift of \$10 million that established the Edward P. Fitts Department of Industrial and Systems Engineering. The Fittses has been a crucial member in the efforts to expand the ISE Department and build the new Fitts-Woolard Hall on Centennial Campus.. ■

Right: Lakewood Community Arts Center
Below: Littleton Academy



IT HAS NEVER BEEN ABOUT PAUL



Dr. Paul Cohen - Distinguished Professor Emeritus

Paul Cohen discovered his passion for industrial engineering at age 15 when his uncle, who had an industrial engineering consulting firm in New York City, asked for help with some time studies and plant layout designs. Over the next 50+ years, Cohen would help tens of thousands of students, clients and colleagues with all aspects of industrial engineering. During that

time, he earned a long prestigious list of accomplishments, honors and national awards. But if you ask anyone who knows him, it has never been "about Paul."

Cohen's journey to NC State began in 2006 with a phone call to ISE professor Robert Young, a longtime friend, regarding an international exchange program he ran with three universities in Brazil. But during the call, the conversation moved to the open department head position in the ISE Department. "I had visited NC State several years prior and had a good impression of the Department," recalled Cohen. He felt the position was attractive given there was a solid base to build on, a supportive interdisciplinary environment and excellent leadership in the College of Engineering. The opportunity

to be involved with designing a new building for industrial engineering education and research. Although the Great Recession in 2008 stalled the project for several years, Fitts-Woolard Hall was worth the wait.

In 2007, the Department had excellent faculty and students but was not as well recognized as it should have been. During the ten years that Cohen led the Department, its stature and national reputation grew significantly. During these ten years, his leadership included recruiting and retaining outstanding faculty, growth in student enrollment and research productivity and positioned the Department as a true leader among ISE departments nationwide.

Through all that success, Cohen never made it "about Paul" but rather about what he could do to help and support others. "He is truly a selfless leader who leads by example and actions," shared College of Engineering Dean Louis Martin-Vega. "Whether it be as a teacher, mentor or researcher. While his love of 'manufacturing' lies at the heart

of his academic and research pursuits, his love for 'people' and helping and supporting all who surround him makes him stand out."

It is safe to say that the Dean speaks for everyone in Engineering. "I want to thank Paul for everything he has done for the students, faculty and staff in the Fitts ISE Department and for all of us in the College of Engineering who have had the privilege to know and work with him since his arrival at NC State," he said. "We are in Paul's debt for his outstanding dedication and commitment to the Fitts' ISE Department, our College and NC State and wish him the very best as he moves into the next stage of his journey."

If you count his days as a teaching assistant, Cohen has taught at three different universities, all told, over 9000 students at both the undergraduate and graduate levels. He believes that teaching and advising connect you to students in a very personal way," Cohen confided. "My advice to our graduates is never to stop learning and be willing to take risks. Stay passionate about what you do and stay connected to the Department and its faculty." He has students he taught many years ago who still stay in contact and meets them at professional meetings and company visits. "It's one of the best perks of the job," he said.

Cohen plans to stay active professionally through research, so you may still see him in Fitts-Woolard Hall. He'd also like to visit more places on his bucket list, domestically and internationally. "Having always been interested in photography, I hope to document my trips and hike/photograph the waterfalls of North Carolina," Cohen promised.

So what gift could anyone give a person that has always put others first? How about sharing his hope that the Carolina Hurricanes can raise the Stanley Cup again here in Raleigh sometime soon?



ISE LOSES SOME OF ITS "HEART"

The ISE Department encountered one of those bittersweet moments when the business manager, Debbie Allgood-Staton, announced her retirement this spring. The "sweet" is that after more than 25 years of working at the University — 18 of those in the ISE Department — Allgood-Staton has earned the luxury of leaving the rat race behind to spend her days spoiling her grandchildren and working in her garden. The "bitter" is that ISE has lost someone who was a big part of the Department's "heart." Don't believe it? Just ask ISE department head Julie Swann.

"Sometimes I call Debbie the 'heart' of ISE since her presence has affected so many personally, in the Department and across the University."

Allgood-Staton began working for NC State in the College of Engineering. When the ISE business officer position opened up, professor Rusty King encouraged her to apply as it would be a promotion. "I am very thankful that Rusty encouraged me to apply, and Dr. Wilson hired me," shared Allgood-Staton. "It gave me the opportunity to grow with the Department through all the changes over the past 18 years." She would not only get the opportunity to work closely with Jim Wilson (department head 1999 - 2007) but Paul Cohen (2007 - 2017) and Julie Swann (2017 - present). "I have learned so much from them and thank them for everything they have done," said Allgood-Staton.

Along with the transitions in leadership, she has experienced a transformation in the Department. When Allgood-Staton joined ISE, there were not as many female students, international students and female faculty members. She believed a significant change came to the ISE's diversity in 2005 when alumnus Ed Fitts made an extremely generous donation to the Department. Thanks to Fitts's gift, the Department was able to award more scholarships, fellowships, endowments

and study abroad programs that supported students and research. "We hired many outstanding new faculty members and were able to bring in the best of the best students," recalled Allgood-Staton. His gift affected all aspects of the Department. The size of the graduate program doubled, and the research budget quintupled.

Over the years, Allgood-Staton had the opportunity to travel to many conferences to promote the Department and recruit students. "I have loved working with each and every one of them," she confessed. "I got to know so many students not only as a student but also on a personal level," she said. "I still stay in touch with many of them through social media. It has been the most rewarding part of my job. I've been through 35 graduations and had the opportunity to get to know so many of them."

Allgood-Staton's hard work and commitment to the Department have become a part of its fabric. "Her leadership has created a culture that values collaboration and teamwork and helps individuals and the ISE community be the best it can be," stated Swann. "ISE will treasure the legacy she has helped build."

The pandemic brought extraordinary pressures to business officers across the University in managing teams virtually, through dynamically changing environments and with a great deal of uncertainty. "Debbie's leadership was essential during this challenging time," explained Swann.

In her well-earned retirement, Allgood-Staton plans to stay busy. "I will spend more time with my grandchildren, do more fishing, gardening, maybe working part-time," she admitted. "I plan to volunteer at my daughter's non-profit organization. Also, just relax and enjoy life."

Allgood-Staton wanted to share some parting words to let everyone know just how special they are and what they meant to her. "Thanks to everyone I have worked with over the past 25 years in the College and the Department," she shared. "To all the team, you are amazing. Each of you has a special place in my heart. You are a dream team, and I am so thankful for the friendships built over the years. Keep working together and always bringing out the best face for ISE! I have had a wonderful experience and wish you all the best in the future."

She had some kind words for the new business officer as well. "Be a good listener," Allgood-Staton said. "Get to know everyone in the Department personally and professionally. Have a close working relationship with the department head. Keep the team motivated and work closely with all of them." In other words, be the new "heart" of the Department. ■



Allgood-Staton and Bernhard at the ISE Transitions Celebration

Bernhard Honors Allgood-Staton


ISE Professor Emeritus Richard Bernhard has been a part of the ISE faculty since 1969 and is one of a small group of people who were here when Debbie Allgood-Staton arrived 18 years ago. He was so impressed by her dedication and caring that when he learned she would be retiring, he gave a \$5k gift to the ISE Enhancement Fund to celebrate Debbie's outstanding career as a business officer. "Debbie is a real treasure," shared Bernhard. "Over the years, she was always warm and friendly and was gracious with her time, particularly whenever I was upset about something. She's a very loving, caring person! HOORAY for Debbie!"

ISE "SEEN"

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



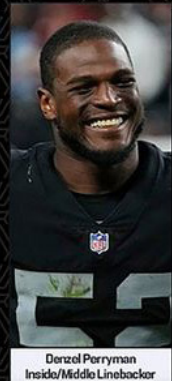


ISE Grad Student Kamlesh Pandey played in the Table Tennis Regionals at the Gymnastic World of Georgia.



PRO BOWL '22 ROSTER REVEAL

LAS VEGAS RAIDERS

AJ Cole
Punter

Maxx Crosby
Defensive End

Denzel Perryman
Inside/Middle Linebacker

ISE Alumnus AJ Cole III was selected to the NFL Pro Bowl in only his third season in the league.

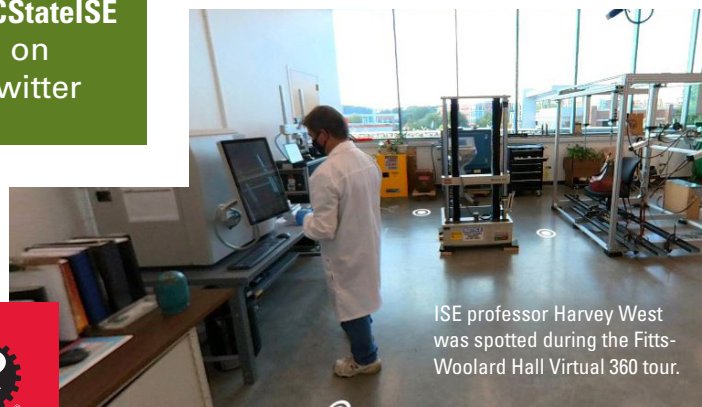


ISE student, now alumna, Rachel Harris performs for her acapella group.



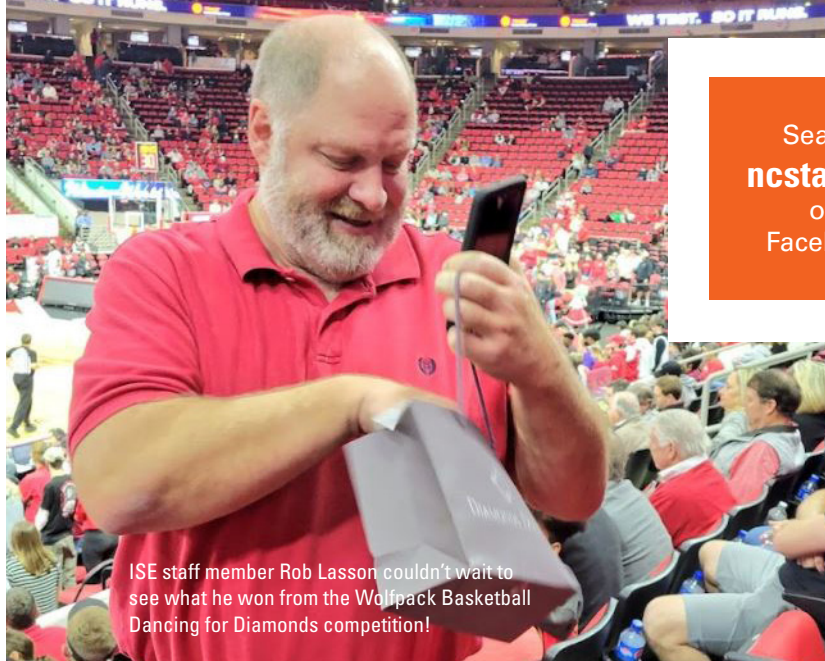
ISE Alumna Georgia Burgess surrounded by her Ulman 4K for Cancer Team - New York.

@NCStateISE
on
Twitter



ISE professor Harvey West was spotted during the Fitts-Woolard Hall Virtual 360 tour.





ISE staff member Rob Lasson couldn't wait to see what he won from the Wolfpack Basketball Dancing for Diamonds competition!

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The Ed and Ed Robot was spotted at the Fitts-Woolard Hall Dedication Ceremony as VIP guests of dean Louis A. Martin-Vega.



ISE Alumnus Ryan Pecaut was featured in the NC State Engineering Spring/Summer 2022 Magazine.



ISE students Zach Kraus, Noah Almond, Shrikar Mummavarapu and Nate Polzin embarked on a race around campus to be the ISE Amazing Race Champions.

@ncstateise
on
Instagram

A group of Fall 2022 Graduate Program potential students from across the country visit the ISE Department and meet current grad students in the Spring of 2022.





UNDERGRADUATE STUDENT SPOTLIGHT

TAYLOR WHITE

It should be no surprise that Taylor White, like most engineers, is strong in math and science. But her interests in psychology ultimately drew her away from the sciences and to industrial and systems engineering (ISE) — the people person's engineering.

White has lived in Raleigh her entire life and figured she would pursue a STEM degree with her knack for science and math. But she was torn between STEM, the discipline she was gifted in, and psychology, a subject she discovered her love for in high school. She found the answer to mixing math, science and psychology when she visited NC State during her junior year. "I really only had a vague understanding of what engineering was until I visited NC State and heard from engineering students," White explained. "I remember specifically hearing from two Engineering Ambassadors that day that opened my eyes to all of the different opportunities and experiences you could get in engineering. I decided that day that I wanted to become an engineer."

White fell in love with the atmosphere and community at NC State during her visit and decided to stay in Raleigh for a few more years. "I originally planned to pursue a major in the College of Sciences, which is when I realized how many options NC State had to offer in the STEM fields and that they had incredible resources for their students," White detailed. After doing some research, she realized that her future wasn't with the College of Sciences. Instead, she discovered ISE, the engineering degree at the intersection of STEM and psychology.

When White isn't in class, she works as a student team leader for the NC State Engineering Career Fair. Students organize the career fair, and her job is to guide the team in preparing the event. White is also an undergraduate research project veteran with the ISE department, most recently working on a research project centered around using data analytics tools to predict defects in additive manufacturing. White also works as a supply chain intern with UPL North America and hopes to find a full-time supply chain or logistics job where she can pursue all of her interests. ■

ADVISORY BOARD 2022

Board Chair's Notes - October 2022

I want to begin by sharing an observation. It feels like things have returned to "normal" on campus for the first time in quite some time. Seeing faculty, staff and especially students enjoying all that Fitts-Woolard Hall has to offer brings joy to my heart. If you are in Raleigh, I encourage you to take a few minutes to tour Fitts-Woolard Hall. While you are there, walk next door and tour the Hunt library. Both buildings are truly technological marvels. Can't make it to Raleigh, take a virtual tour of Fitts-Woolard Hall and the ISE Department at go.ncsu.edu/tourFWH.

I would also like to take this time to thank the outgoing advisory board members who have completed their terms this past year. Please give a special thank you to Joe Pleasant, Rashida Hodge and Larry Bowman for their years of service to the board and the Department. This is also a perfect time to welcome our newest board member, Tracy Doaks. As many of you know, Tracy is an ISE Distinguished Alumna (Class of 2016) and graduated from the Department with her bachelor's in 1990. You can see Tracy's impressive biography at <https://www.ise.ncsu.edu/alumni/alumni-hall-of-fame/#2016>.

Speaking on behalf of the ISE advisory board, I want to thank those who supported the Department this past year. Especially those who participated in this year's Day of Giving. Again, your generosity earned ISE thousands of dollars in additional matching funds from the board and the College. A complete list of everyone who contributed to the Department throughout the 2021-2022 academic year starts on [page 30](#).

In closing, I would again encourage everyone interested in industrial and systems engineering at NC State to find a way to get connected. As part of the Alumni Resources Program, the Department created an excellent "how to volunteer" web page (<https://www.ise.ncsu.edu/engagement/volunteer-alumni-engagement-nc-state-ise/>) that explains all the non-monetary ways you can give back. Please know that every "time investment" you make pays enormous dividends in our shared future. The web page has an FAQ section that answers many of your questions. If you find something that fits your interests, we welcome your cooperation.

GO PACK!

Stuart Nisbet, BSCSC 1987

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.



Tony Blevins
BSIE, NC State 1989
ISE Distinguished Alumni 2018
VP of Procurement at Apple, Inc.



Damon Butler
BSIE, NC State 2002
President at Triangle Blvd
President at Intelligency



Tracy Doaks
BSIE, NC State 1990
ISE Distinguished Alumni 2016
President and CEO at MCNC



Cheryl Doninger
MCS, NC State 1986
Senior Research and Development Director at SAS



Candance Gingles
BSIE, NC State 1987
Director of Quality Engineering at Pfizer



Carlos Gonzalez
Ph.D., NC State 1995
ISE Distinguished Alumni 2019
Dean, Polytechnic University of Puerto Rico



Jiao Gu
Ph.D., NC State 1992
ISE Outstanding Young Alumni 2016
President, CEO and founder of FEI Systems



Jeffrey Johnson
BSIE, NC State 1978
ISE Distinguished Alumni 2017
Owner of JWWJ Energy



Gayle Lanier
BSIE, NC State 1982
ISE Distinguished Alumni 2007
Senior VP and CCO of Duke Energy (Retired)



Leon McGinnis
Ph.D., NC State 1975
ISE Distinguished Alumni 2006
Professor Emeritus at Georgia Tech



F. Scott Moody
BSIE, NC State 1980
ISE Distinguished Alumni 2015
Co-founder and CEO of K4Connect



Patrick Murray
BSIE, NC State 1988
Director, Global Consumer Sales Development, Intel Corporation (Retired)



David Parker
MSM, NC State 1996
Co-founder and CEO of Dexios
Co-founder and CEO of ServeMore



Juli Trexler
BSIE, NC State 1997
ISE Distinguished Alumni 2017
VP, Global Business Partner Channel Sales



Stuart Nisbet
BSCSC, NC State 1987
Chief Data Scientist at Cadient Talent

MONEY IS JUST LIKE MANURE



Richard Bernhard, ISE professor emeritus, has a long history of contributing to NC State and the ISE department. He truly cares about the people he helps impact. "From the pen of Thornton Wilder in 'Hello Dolly' and elsewhere: 'Money is just like manure. It doesn't do any good unless it's spread around helping little things to grow!'" explained Bernhard. With this philosophy in mind, a new endowment has been created to ensure that students will have scholarships and other monetary needs met for decades.

In the Spring of 1986, Bernhard's father, Harold Bernhard, gave him \$20,000 of stock in what was then called Carolina Power and Light Company. "I just left that stock intact, reinvesting all the dividends and never taking anything out for myself," Bernhard reflected. "The company thrived, changed its name and merged several times till as of mid-2021 it was for me about \$200,000 worth of Duke Energy stock."

In 2021, Bernhard donated about half of this stock to the Cornell University Hotel School in memory of his brother, Robert, a 1962

graduate of the school. This donation formed the Robert Bruce Bernhard Memorial Endowment, which the Dean of the Hotel School uses for annual scholarships and other monetary needs.

So when ISE Director of Development and good friend Wanda Urbanska shared with Bernhard a several-year plan for building a permanent endowment for the ISE Department, it reminded him of the donation he made to the Cornell University Hotel School. "That triggered in me what I think is the much simpler idea of giving the rest of my Duke Energy stock, valued at over \$100,000, to NC State ISE," Bernhard said. This donation will achieve the same results as the gift to Cornell. It also shows Bernhard's appreciation for a department that has been a central part of his and his family's life for the past 50 years.

Calling all "Good Guys"

Bernhard is not someone who does things simply for a compliment. "A major intent of your article should not only be to tell the world that Dick Bernhard is a 'good guy,' but also that they too can be 'good guys'

by donating to NC State ISE," he said. Donating time, skills and funds help the ISE program's current and future students, faculty and staff achieve excellence. Donations to the Department can be made at ise.ncsu.edu/alumni/giving, and non-financial gifts can be made at ise.ncsu.edu/engagement/volunteer-alumni-engagement-nc-state-ise.

More on Bernhard at NC State

Bernhard has provided philanthropy over decades across NC State, including the College of Engineering, Division of Academic and Student Affairs, and the libraries. He previously created library endowments in his three children's names to honor their passions and success in their respective fields. He also named group study rooms in Hunt Library in honor of his late wife, Cynthia Petersen Bernhard, and recognition of his friend and colleague, James R. Wilson IV. Bernhard has created the ISE Enhancement Endowment to leave a legacy to the department where he has served for over half a century. ■

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, 2021 and June, 2022**. While we make every effort to be accurate and thorough, it is possible to accidentally omit or misspell a name. Please contact 919.515.9976 with any additions or corrections.

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#NCStateISE ambassador and fall graduate Georgia Burgess has received a lot of attention lately and rightfully so. Check out her many accomplishments and her plans for the future. ise.ncsu.edu/blog/2021/12/1... Credit to NC State Communication and



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