ABE UPDATE

CENTENNIAL EDITION

YEARS OF INNOVATION

1923 - 2023

UF/IFAS AGRICULTURAL & BIOLOGICAL ENGINEERING
Dear ABE Students, Staff, Faculty, Alumni, Emeritus, and Friends,

The University of Florida (UF) Agricultural and Biological Engineering Department (ABE) is excited to celebrate its 100th anniversary in 2023. Our department was established with the appointment of Professor Frazier Rogers as its Head and leader in 1923. Since then, ABE has grown steadily over time: starting with six faculty at its 25th anniversary, 21 faculty at its 50th anniversary, and 30 faculty at its 75th anniversary. ABE’s academic, research, and Extension relevancy to Florida and the world continues to expand. In 2023, the department includes 42 faculty located on UF’s main campus and four Research and Education Centers around the state.

Over this past centennial year, we have spent time reflecting and reminiscing. We acknowledge our present success is due greatly to the vision and commitment of former faculty, staff, and students who set a high standard of excellence and created a community of shared learning and collaboration. We continue to hold these values and strive to emulate this legacy for the next generation of faculty, staff, and students who will lead and support the department’s mission.

The adaptability and vision of the department and the foresight to take risks and embrace change has been its strength and vision. The department has traditional roots in mechanics of agricultural systems which focused on agricultural machinery, pumps, and irrigation. This later transitioned to include a more natural resource and environmental approach as the agricultural engineering systems thinking skills were found to be prime for solving issues facing our land and water systems. The department quickly integrated these topics into their research and curriculum and acquired new faculty with this expertise. The next most significant development for the department and the discipline was the evolution of Information Technology (i.e., combination of networking, telecommunications, and computers). The progression from the first computers to currently available computing power has aligned with department integration of this technology. During the time of growing natural resource focus and computer integration, the discipline started integrating more biology into the research and the curriculum as the science became more quantitative in nature. These changes resulted in a use of the term ‘biological systems’ to describe components of our discipline and resulted in a name change to the department (1996) to the Agricultural and Biological Engineering Department. A similar change occurred in the society in 2005 with a name change to the American Society of Agricultural and Biological Engineers.

Through this evolution, faculty were extremely productive and opportunistic to include these new innovations in their programs. One such example from ABE is the creation of a crop modeling system called Decision Support System for Agrotechnology Transfer or DSSAT. Today, this software has become the most widely used crop model worldwide with applications in 187 countries. In addition, the department has built a strong emphasis on computer simulation modeling with a range of modeling expertise and an emphasis on modeling innovation to create unique, project-driven applications. Simulation modeling has remained a strength for ABE and has been further developed through new initiatives in Artificial Intelligence (AI) and high-performance computing.

The AI initiative at UF resulted in four new recent faculty hires in ABE. These hires strengthened our precision agriculture and mechatronics programs creating one of the strongest in the nation.

We currently have six faculty dedicated to this topic and contributing to research, teaching, and Extension activities. AI is also being integrated across the Biological Engineering and Agricultural Operations Management focus areas with new certificates in SmartAg, modules in courses, and linking of simulations models and AI tools.
The current challenges facing our world require expertise of systems thinkers which is a cornerstone of the agricultural and biological engineering discipline. This can be seen in the increased interest to re-think our business practices and modify towards greater circular bioeconomy systems. This concept, as described by FFAR, is defined as an economy that moves from a linear “Take-make-consume-throw away” to a system where waste products become inputs to other systems resulting in a reduction in waste and in greater system reuse of byproducts. Circular bioeconomy systems have greater efficiencies, incorporate technology and analytics, and result in more sustainable practices. This idea is not new for ABE and has been integrated into many aspects of our discipline, as can be seen in the anaerobic digestion, sustainable packaging programs, and bioenergy programs. The added benefit of big data and AI have enabled even greater possibilities of transforming linear systems to more circular bioeconomy systems. This capability and the increased need to be more sustainable with our planet resources has reinvigorated the circular bioeconomy concept in our department with specific efforts on digital twins, circular controlled environment agriculture, and food waste conversion to useful product.

The degree in ABE has continued to be versatile and useful for our students. Companies that hire our students include Nestle USA, Kimley-Horn, Amazon, Jones Edmunds and Associates, Bayer Crop Science, HM Clause, The Walt Disney Company, PepsiCo, Bacardi, Duke Energy, NASA Goddard Space Flight Center, and Mock Roos – just to name a few. In addition, many universities are home to ABE alumni as faculty members – including North Carolina State University, University of California – Davis, Auburn University, University of Georgia, and Cornell University.

We continue to improve our curriculum and add new learning opportunities. One example is our non-thesis MS online degree which provides a different modality for gaining advanced education from anywhere in the world. Likewise, we have been developing and launching certificate programs. As innovation drives new technologies and the rate of this change increases, continued investment in workforce development through online learning programs will be in demand. These efforts also align with Extension efforts to continue to translate research findings into information and tools that are useful and implemented by our clientele.

ABE Extension faculty continue to provide service to our stakeholders throughout the state. While our past was dominated by an agricultural water management and mechanical equipment Extension focus, our future shows the evolution of this expertise. We live in an increasingly urbanizing state with needs to manage water resources, adapt and mitigate for climate change, protect our natural resources (e.g., estuaries, Everglades, springs, etc.), and support viable agriculture. We see a future increase in Extension programs focused on these needs. In addition, alternatives such as Controlled Environment Agriculture (CEA), alternative energy sources, and circular bioeconomy systems are emerging bringing with them new Extension outreach opportunities.

At UF, the slogan is ‘It’s great to be a Florida Gator’. While this is no doubt true, it is REALLY great to be part of the UF Agricultural and Biological Engineering Department. I am excited about our future and the contributions we will make to the world. I am also extremely grateful for those who came before me and helped create the department it is today.

Go Gators!

Dr. Kati Migliaccio
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WHERE WERE WE IN 1923?

In 1923 you could buy bread for around $0.09 per loaf. Today, the price of bread ranges anywhere between $3.00 - $5.00!

A century ago, a gallon of milk cost $0.35! Today, you will pay around $4.34 per gallon for conventional whole milk.

Eggs in 1923 cost only $0.13 a dozen. Imagine how many omelettes you could make with $1!

Did you know gas cost around $0.14 per gallon? Today that would be around $2.51 per gallon!

For the first time ever in 1923, the presidential address is broadcast on the radio.

The ABE department and The Walt Disney Company share a birthday! In 1923, the beloved Walt Disney Company was born and continues to entertain us today.

Introduced in 1923, the MilkyWay candy bar is owned and manufactured by Mars Inc. Fun fact: MilkyWay is the oldest Mars Inc. chocolate bar that is still around today!
In 1918, Professor Frazier Rogers joined the University of Florida’s Department of Agronomy and Agricultural Engineering as the first full-time teacher in Agricultural Engineering. The true beginning of his legacy occurred in 1923 when the Department of Agricultural Engineering was established as the fourth department in the College of Agriculture. Professor Frazier Rogers then became the inaugural Chair of the newly formed Agricultural and Biological Engineering Department, ushering in a new era of growth and innovation.

Over the past century, the department, formerly known as Agricultural Engineering until 1994, has continually evolved its curriculum. In its early years, courses that addressed the practical needs of the time, such as Farm Machinery, Farm Motors, Drainage and Irrigation, and Farm Concrete and Woodwork, formed the foundation of agricultural engineering education. The curriculum now encompasses global sustainable energy, agri-food systems innovation, fundamentals and applications of biosensors, applications of life cycle assessment in biological engineering, advanced robotic systems design, biosystems modeling, and much more.

Throughout its history, the department introduced various academic programs, including the B.S in Agriculture with a major in Agricultural Engineering (1925), B.S in Engineering with a major in Agricultural Engineering (1950), and a B.S in Agriculture (Mechanized Agriculture) in 1958. In 1982, the Ph.D. in Agricultural Engineering was approved. The department made history in 1985 with its first female faculty hire and in 1986 introduced the Agricultural Operations Management degree, which replaced the Mechanized Agriculture program.

Having graduated over 2,300 students, the department plays a vital role in addressing global challenges such as climate change and food security. Its multidisciplinary approach blends engineering with biological and social systems, preparing students and researchers to tackle complex agricultural and environmental issues.

As we peer into the future, the significance of ABE becomes even more apparent. ABE’s multidisciplinary approach will be key to finding sustainable solutions for pressing global challenges such as climate change, population growth, resource scarcity, and food security.

At the heart of our department lies the pursuit of knowledge. We are committed to conducting cutting-edge research, exploring new frontiers, and expanding the boundaries of understanding to generate knowledge that can be shared and applied in real-world contexts. As the department looks ahead to the next 100 years, we remain committed to shaping future leaders who will revolutionize agriculture, promote sustainability, and meet the demands of a changing world.
A TRIBUTE TO OUR LEADERS

From 1923 - 2023, the last 100 years for Agricultural and Biological Engineering have been significant in meeting the ever changing needs of our community, nation, and world. Follow along the this timeline that shares our centennial journey.

1923
Frazier Rogers became the first chair in the Department of Agricultural Engineering (former name of ABE.)

Page 6 Pictures (L to R): Frazier Rogers breaking ground on what would be the ABE building. | AOM Officers of 1996. | Emeritus faculty, Wendell Porter, teaches a class in agricultural operations, as part of the Agricultural and Biological Engineering department in 2005. | Dana Porter, President of ASABE & Darrin Drollinger, Executive Director of ASABE, awards Dr. Kati Migliaccio, Chair and Professor of the ABE Department, a plaque honoring the department’s success of 100 Years. | A classroom of ABE students | Dr. Kevin Wang and Dr. Dana Choi explore with a drone | Dr. Clyde Fraisse poses with a successful haul of strawberries. | Dr. Bruce Welt teaches students in a packaging class | Photo of the late Frazier Rogers. | W.H. Worthington - President of ASAE, Frazier Rogers - Chair of Agricultural and Biological Engineering, Fred Kent - Chair, Board of Control, Willard Fifield - UF Provost of Agriculture, and J. Wayne Reitz - UF President come together for the dedication of the new Agricultural Engineering Building in 1955 | 2023 ABE Grad students at the Centennial Celebration.
CELEBRATING THE FIRSTS

1925
BS in Agriculture with major in Agricultural Engineering was first offered.

1946
The first Extension program initiated with John M. Johnson.

1950
A curriculum for the B.S. of Agricultural Engineering degree was first authorized.

1952
The First student graduated under the new B.S. curriculum.

1985
Dorota Z. Haman was hired as the first-ever female faculty member of the Agricultural Engineering Department.

1943
Agricultural Engineering owned farm shop building (a vintage World War I temporary wooden structure), much like the wooden barracks pictured here. Before this, the department was mainly housed in the College of Agriculture building.
A Journey into Tech

Dr. Leslie Gowdish discusses how her time at UF ABE shaped her work, partnering with clients to maximize capital efficiency through technology enablement.

The focus of the talk shared by Leslie Gowdish was on the speaker’s journey from studying biological engineering at UF ABE to working in technology enablement. Leslie Gowdish is a Managing Director in FTI Consulting’s Asset Lifecycle Management practice within Construction Solutions and is based in Dallas, Texas.

In her seminar, Dr. Gowdish outlined how the faculty, learnings, and time at UF ABE evolved into her work where she is partnering with her clients to maximize the capital efficiency of their assets through technology enablement. Leslie began as a freshman at the University of Florida, choosing the broad field of engineering due to her affinity for math. A pivotal moment was encountering Dr. Leary, an undergraduate advisor, who made her feel welcome in the Agricultural and Biological Engineering (ABE) program.

Leslie emphasized the diverse nature of ABE compared to other engineering disciplines. The foundational courses in differential equations, statistics, chemistry, and critical thinking still prove relevant in her current work.

However, she delved into her specialization, which included remote sensing and geographical information systems (GIS). They found GIS particularly interesting as it allowed them to analyze locational data and make decisions related to resource targeting and plant construction.

Teamwork, a key aspect of her university experience, contributed to developing interpersonal and leadership skills. She emphasized the importance of working with diverse teams in overcoming challenges, skills that proved vital in her current role.

After graduating with a BS in BE, the speaker explored real-world applications of her education, working on projects like tracking panthers using unmanned aerial vehicles.

Eventually she returned to graduate school, working with Dr. Muñoz-Carpena and transitioned into hydrology, even though she initially lacked knowledge in the field, showcasing the adaptability of a BE degree.

Leslie discussed her doctoral research, which led to the development of a new equation and model for predicting soil water infiltration and redistribution. This expertise paved the way for a career in technology enablement, where she currently focuses on implementing project management and control systems for global clients.

Dr. Gowdish elaborated on her role as a consultant, addressing issues related to people, processes, data, and technology. She emphasized the significance of data intelligence.
and the journey from descriptive to prescriptive analytics. She shared insights into her work with a Fortune 100 oil and gas company, where they optimized cost management processes and implemented a global system for capital projects and turnarounds.

Dr. Gowdish concluded by highlighting the importance of technology enablement in enterprise transformation, providing a broad overview of their methodology. She showcased various technologies she works with, discussed the digital disruptors in the industry, and presented a case study of their work with the oil and gas company.

The seminar closed with an invitation for questions and a transition to the roundtable discussion.
BY MR. ROBERT HORTON  
VP Environmental Affairs & Sustainability DFW International Airport, BS 1994, MS 1999, & PhD Student

The Power of Digital Twins

Mr. Robert Horton examines how DFW Airport uses digital twin research to assess infrastructure against threats, providing insights into system performance and resilience under different conditions.

As a child from a relatively small country in South America (Guyana), my lifelong dream was to become an astronaut, and to get there, I first needed to become a pilot.

My journey at the University of Florida started in Aerospace Engineering and took me on an unforgettable path to my current role as the Vice President of Environmental Affairs & Sustainability at Dallas-Fort Worth International Airport (DFW Airport). After service in the United States Marine Corps (USMC) during the first Gulf War, Dr. Jonathan Earle recruited me to the Agricultural Engineering program (before the name change to the Agricultural & Biological Engineering or ABE department).

ABE’s interdisciplinary curriculum enabled my transition from an undergraduate focus on Soil & Water Conservation to a graduate focus on designing microclimate environments, facilitating research on climate change effects on agriculture. My Master’s thesis title was “Microclimate characterization of a temperature gradient chamber,” under Dr. Pierce Jones’s direction. It opened the door for me to travel to the Philippines to work at the International Rice Research Institute (IRRI). Subsequently, my first job after my Master of Engineering was in an environmental engineering firm that assessed and developed (and designed) strategies to remediate groundwater and soil subsurface contamination. After becoming proficient at designing remediation strategies, I was selected as the lead engineer to develop solutions for the DFW Airport’s jet fuel and chlorinated solvent contamination. My company’s designs accomplished their goals 2-4 years faster than predicted.

After serving on the ABE Advisory Board (invited by Dr. Dorota Haman and Dr. Migliaccio), I wanted to complete my educational journey, but working a full-time job at one of the busiest global airports presented a unique challenge. Then COVID created a unique mixture of circumstances that made the University of Florida the ideal place to return for my Ph.D. studies. Although ABE does not (yet) offer a distance education pathway, the School of Natural Resources and Environment (SNRE) does. SNRE also allowed me to work with faculty I was already familiar with and unique experiences that fit together perfectly. Dr. Migliaccio recommended Greg Kiker as my Committee Chair; this was a golden connection because of his research on biological complexity, decision science, and resilience.

My job at DFW Airport is to protect people from the harmful effects of environmental pollution and natural resources from the adverse effects of airport activities. Inspired by Kate Raworth’s “Donut Economics: Seven Ways to Think Like a 21st-century Economist,” our airport aims to create a safe space for humanity and influence the world to achieve a shared vision for our people and planet.

My dissertation involves three connected topics that are stimulating to me and poised to impact our industry:

A systems-based approach for resilience assessment of airport infrastructure: bridging expert opinion and decision science.

Using digital twins to evaluate complex infrastructure system resilience: wargaming airport functionality in complex risk scenarios.

I deeply appreciate the investments by ABE faculty from Pierce Jones recruiting me as an undergraduate to pursue a master’s program that influenced DFW’s becoming the first carbon-neutral airport in North America in 2016 to Dr. Haman and Migliaccio supporting my journey back to academia. I also sincerely appreciate the knowledge gained from studying under Dr. Greg Kiker, whose passion for teaching and researching meaningful and practical science for real-world applications made my journey so enjoyable and fulfilling.

Finally, I accomplished another significant feat in hiring the first ABE graduate in my team, Dr. Savannah Morgan, who completed her doctoral studies this year and will now work as a data scientist, initially focusing on community effects of aircraft noise and other specialized projects.

Mr. Michael Register, Executive Director at the St. Johns River Water Management District; BS 1988, MS 1991 • Mr. Charles Shinn, Director of Government & Community Affairs at Florida Farm Bureau Federation, BS 1981, MS 1992 • Mr. Jason Strenth, State Conservation Engineering USDA NRCS, BS 1994

Alumni Serving In Florida

Mr. Michael Register, Mr. Charles Shinn, and Mr. Jason Strenth share how they are impacting the state of Florida as UF/ABE Alumni.

The seminar featured three distinguished alumni, Mr. Charles Shinn, Mr. Jason Strenth, and Mr. Michael Register who are currently serving the State of Florida in significant positions at Florida Farm Bureau, US-DA-NRCS, and the St. Johns River Water Management District, respectively. This seminar marked the culmination of a successful year long seminar series, leading up to a grand centennial celebration scheduled for the end of October.

1950
A curriculum for the B.S. of Agricultural Engineering degree was first authorized.

1952
First student graduated under the new B.S. curriculum.

1959
ABE building named “Frazier Rogers Hall” to honor the first department chair. (Pictured from left: Fifield, Brooker, Watkins, Kinard, Wilkowske)
The structure of the seminar involved each panelist providing an overview of their respective programs. Following these presentations, a question and answer session allowed for deeper insights. The audience was encouraged to actively participate in this interactive segment.

The first speaker, **Mr. Michael Register**, a registered professional engineer in Florida with a MS in Engineering and BS in agriculture engineering from the University of Florida, currently serves as the Executive Director of St. Johns River Water Management District. With 33 years of experience at the district, Mr. Register highlighted his diverse roles in regulatory engineering, ground and surface water modeling, water supply planning, and the Global Levels Program. He emphasized the reforms implemented during his tenure to enhance the regulatory process and facilitate agricultural compliance with conservation measures.

Mr. Register elaborated on the St. John’s River Water Management District’s extensive responsibilities, covering water supply, water quality, flood protection, and natural systems across 18 counties, 12,000 square miles, and a population of almost six million people. The organization’s leadership team, featuring two agricultural engineers, was presented as a testament to the representation of the expertise coming from biological engineers.

The district’s focus on data-driven decision-making was emphasized, showcasing various monitoring initiatives, including water sampling and well monitoring. Mr. Register delved into the critical role of the district in environmental resource permitting, with a significant workload depicted in the number of permits received annually.

A comprehensive overview of water management projects showcased the district’s commitment to sustainability. Examples included the Black Creek Water Resource Development Project, the Taylor Creek Reservoir expansion, and efforts to preserve Silver Springs.

**CONTINUED**
Mr. Register concluded by highlighting recent organizational changes, strategic plans, and ongoing initiatives addressing environmental challenges like the interior lagoon and Lake Apopka restoration.

The second speaker, Jay Strenth, also shared insights into his professional journey. Graduating in 1994, he started working with the USDA-NRCS in Georgia, eventually becoming a State Conservation Engineer for NRCS in Florida in 2016. In this role, he held responsibility for the overall NRCS engineering program in the state. Additionally, he served as the program manager for NRCS’s Emergency Watershed Protection Program in Florida, offering financial and technical assistance to local governments recovering from damages caused by natural disasters.

Strenth, a licensed professional engineer in both Florida and Georgia, highlighted his involvement in professional organizations such as ASABE, where he served as the Florida section chair and vice-chair for programs.

During his presentation, Strenth emphasized NRCS’s evolution over the years and its commitment to working with local landowners, ranchers, and foresters to conserve and protect natural resources, including water, soil, air, and energy.

He discussed the shift towards providing both technical and financial assistance, particularly through programs like EQIP (Environmental Quality Incentives Program). Strenth delved into various topics where NRCS has made a significant impact, such as irrigation upgrades, controlled drainage projects, wetland restoration through easements, and livestock watering systems. He discussed the importance of financial assistance in these initiatives, citing examples of successful projects.

Moreover, he highlighted the role of NRCS in erosion control, citing a recent project in Santa Rosa County with a construction cost of two million dollars. He also touched on animal waste management and the agency’s efforts in helping local communities recover from natural disasters through the Emergency Watershed Protection Program.

Strenth expressed his passion for the fieldwork and engineering aspects of his job, despite the administrative responsibilities that come with his current role.
He concluded by emphasizing the positive impact of programs like Emergency Watershed Protection in aiding communities affected by hurricanes and other disasters.

In summary, Jason Strenth provided valuable insights into NRCS’s multifaceted role in conserving natural resources and supporting communities in times of need, showcasing the agency’s commitment to environmental stewardship and sustainable practices.

Mr. Charles Shinn, the Director of Government and Community Affairs for Florida Farm Bureau Federation, also spoke. Shinn represents the Farm Bureau and agricultural community on water, natural resources, and growth management issues in Florida. Holding degrees in agriculture from the UF, Shinn shared his experiences, starting from his degree in 1981, through working on his family’s citrus operation, and eventually joining the Florida Farm Bureau Federation in 2006.

Shinn emphasized the challenges facing Florida agriculture, particularly the critical role of water management. He highlighted the need for a committed effort to protect natural systems, Springs, and water resources amid increasing population growth and development. Development encroachment into agricultural areas poses another significant challenge, necessitating strong legislative protections.

Regarding policy changes, Shinn stressed the importance of an informed legislature that understands agriculture’s significance. He called for continuous efforts to strengthen existing laws and emphasized the need for ongoing education to make policymakers aware of the challenges and needs of the agricultural sector.

In response to a question about student involvement, Shinn mentioned internship opportunities within the Florida Farm Bureau Federation and encouraged students to join the Collegiate chapter of Farm Bureau on the University of Florida campus. He also discussed a program called “Cares,” recognizing farmers for going beyond the required best management practices to protect the environment.

In conclusion, Shinn underlined the importance of informed policy-making, collaboration with state agencies, and the active involvement of students and researchers in addressing the challenges faced by Florida’s agriculture and natural resources sector.
Kennedy Belknap

MAJOR:
Biological Engineering, Land & Water Resource Engineering

What sparked your interest in pursuing this field?
My name is Kennedy Belknap, and I am from Washington state. I just completed my undergraduate degree in the Biological Engineering program, and I will be continuing in the ABE department to complete my Masters with a focus in hydrologic sciences. When I initially started at UF, I was enrolled in the Biomedical Engineering program. I quickly switched to Biological Engineering after my second semester and haven't looked back since. I chose this path because I am passionate about improving how sand dams and wells are implemented in Africa.

What's one of your proudest moments at UF?
Throughout my time at UF, I have had several significant moments. One of my proudest
moments was this December when I walked across the stage at graduation. I reflected on how scared I was as a freshman, coming to Gainesville and not knowing anyone, versus where I now am. I have made lifelong friends and have met amazing mentors. When I first arrived at UF, I couldn’t have imagined where I would be now.

**How does it feel to be part of the centennial class?**
Being a part of the centennial celebration was very special. I got the privilege of seeing members of the department from all different eras. The amount of people that came to the celebration events emphasizes the influence the department has on individuals. I know it has left an amazing influence on me so far, so it was great to see others who have had the same experience as I have.

**What’s on the horizon for you?**
Moving forward, I plan on graduating with my graduate degree in Spring 2025, while working part time. I am not completely sure where my path will lead me after graduation, but I would like to enroll in Peace Corps, or a similar program where I can serve others.

**Final Thoughts?**
I love the ABE department because of its small size. The class sizes allow students and faculty to interact a lot more, and learn in unconventional ways, like lab experiments and in class demonstrations. The faculty become more like mentors and they are invested in the students understanding of the subject. Additionally, there is an abundance of opportunities that I have been able to be involved in.

[kennedy photo]

Kenny poses with the ASABE Outstanding Student Award she received at the Florida Section Meeting.

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**1986**
The Agricultural Operations Management degree replaced Mechanized Agriculture through the College of Agriculture.

**1994**
Name of the department changed to “Agricultural and Biological Engineering” from “Agricultural Engineering.”
MEET YOUR CENTENNIAL CLASSMATES

Shreeja Sreekumar

MAJOR:
Master of Science, Process Modeling and Sustainability

What sparked your interest in pursuing this field?
I was born and raised in India where I completed my bachelor’s in biotechnology engineering and worked as a process engineer. I always wanted to pursue my master’s in biological process engineering and started my course in UF ABE in August 2021 when the pandemic was ending. I studied and worked under Dr. Ziynet Boz who was my advisor and guided me throughout my master’s at ABE. I loved exploring Gainesville during my time here and loved going on bike trails in this city!

What’s one of your proudest moments at UF?
I have cherished every moment that I spent here at the ABE department as everyone were so welcoming to new students like me coming from

1998
BS/MS combined undergraduate/graduate program was approved to streamline academic training.

1999
Name of the college change to “College of Agricultural and Life Sciences” from “College of Agriculture.”
a different country! I loved participating in the mentor-mentee programs that helped me build confidence and meet so many new members in the department.

**How does it feel to be part of the centennial class?**
I feel proud that I get to graduate when the department is celebrating its centennial year! I couldn’t have been here at a better time. This year was filled with celebration, conferences, getting to know the department’s history and I am honored to be a small part of ABE’s milestone.

**What’s on the horizon for you?**
I am excited to apply my engineering skills that I gained from UF agricultural and biological engineering department and looking forward to working as a process engineer.

**Final Thoughts?**
I had a great time working with Dr. Boz who helped me develop my professional and communication skills! I appreciate the department’s efforts in hosting so many interesting events for graduate students which I have been a part of. I will also miss participating in the ABE GSO’s monthly meeting and mentor-mentee programs especially pumpkin carving during Thanksgiving which was a new experience for me!

Shreeja shares her research during the annual ABE 3MT competition.
Our alumni are the bedrock of our identity, laying the foundation for a century of excellence in the ABE department. Explore their inspiring journeys, shaping a legacy of distinction that continues to inspire future generations.

1950s

Jerry R Lambert
1958, B.S. in Agricultural Engineering

What is your fondest memory of ABE?
Taking classes that applied engineering principles to real world life as applied to agriculture.

What did you do after graduating?
After my Bachelors in Ag Engineering I interned at USDA-SCS (then), first in Stuart, FL. I transferred to Spartanburg SC in the Watershed Planning Unit, where I spend 13 months before returning to Okeechobee to work on Fisheating Creek drainage project a few months. I then returned to Gainesville for MSE study for a year, then to NC State for my PhD. Then to Clemson University where I spent 33 years teaching and researching.

What are you doing now??
After retiring from Clemson University I learned of insulated concrete forms to build. I enjoy the logistical and engineering challenges of constructing residential and commercial buildings that are energy efficient, strong, aesthetically pleasing and long lasting. As PE in SC and GA, and as General Contractor in SC, I stay busy helping owners, contractors, architects and other engineers to create dream homes.

How did the ABE Department impact your life?
Gave me the knowledge and tools to practice engineering and enjoy life!
What is your fondest memory of ABE?
My father, David Eller’s fondest memory, was how he got into the ABE department (AGE back then). He was in Mechanical Engineering, and they would not provide enough space for his Engineering Fair project, which was models of different axial flow propeller pumps. The professors for ABE approached him and suggested he put it in their area and consider changing to become an Agricultural Engineer. He did, and his Engineering Fair project won that year.

How did the ABE Department impact your life?
Through the course on power and machinery, my father learned about Hydraulic power, which he was able to apply to our products, and eventually earn numerous patents on pumping technology. In addition, our entire family and business continues to benefit from numerous relationships with students and faculty we have come to know from UF.

How will ABE impact the next 100 years?
I think that it will continue to be one of the best engineering education someone should consider. It helps to develop well rounded thinkers, that can solve problems, from a local level, to world scale, because of the broad foundation an ABE receives across multiple engineering disciplines.
1980s

Ashim Datta
1985, Ph.D. ABE

What is your fondest memory of ABE?
Hanging out with my office buddies, especially Chris Moran, Debbie Moran, and John Capece.

What did you do after graduating?
I was a post-doc in the department for a year. I then joined the faculty of the then Agricultural Engineering at Cornell University where I have been since.

What are you doing now?
Professor of Biological and Environmental Engineering at Cornell University, teaching and doing research in biological and food engineering.

How did the ABE Department impact your life?
Being in an academic research career, the help I got from ABE Dept. turned out to be critical. I can think of at least two reasons - 1) Prof. Teixeira introduced me to what is today computer-aided food engineering that I built my career upon, and 2) Prof. Isaccs came up with the significant amount of supercomputing resources needed to complete a novel computing project--without these resources, I could have never completed my Ph.D.

Dr. Jim Jones’s support and help during my Ph.D. days have also helped solidify my interest in mathematical modeling.

1990s

Tina Farmer
1999, B.S. Agricultural and Biological Engineering

What is your fondest memory of ABE?
Going on a class field trip to various food manufacturing facilities in Florida. I had a great time bonding with classmates and seeing various career opportunities.

What did you do after graduating?
I worked for Kraft Foods then Good Humor Breyers for a few years. For the past 17 years I have worked in School Nutrition in local school districts and at the state level, during that time I received my Masters of Business Administration.

What are you doing now?
I am currently the Executive Director of School Nutrition and Procurement Services for Cherokee County Schools in Canton, GA.

How did the ABE Department impact your life?
The ABE Department impacted my life by showing me food science and engineering possibilities that I never knew existed. I always loved food science and engineering and the ABE department showed me that both was possible.
**2000s**

**Sam Flood**  
2002, B.S. Agricultural & Biological Engineering  
2006, Ph.D. ABE

*What is your fondest memory of ABE?*  
While I enjoyed all of the learning in several classes, labs and graduate work, my fondest memories of ABE are the people. The smaller size of the department and the quality of the administrative leadership, faculty, staff and students made it feel like a family.

*What did you do after graduating?*  
After graduating from ABE in 2006, I accepted a position with John Deere working on design and development of compact utility tractors. Over the past 15 years I’ve had various roles within the product design group.

*What are you doing now?*  
Currently I am the John Deere compact utility tractor systems engineer.

*How did the ABE Department impact your life?*  
ABE has impacted my family through multiple generations. My father received his bachelor's of agricultural engineering from UF ABE in 1962. While much of my professional career has been separate from the relationships I developed at UF ABE, it provided me a foundation of knowledge and skill sets that have been fundamental to my career.

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**2010s**

**Gaby Cruz**  
2012, B.S. Agricultural and Biological Engineering

*What is your fondest memory of ABE?*  
All of the late nights studying in the ABE building. I will never forget the friendships made in the building because of our late night studying, or the common goal in collaborating to finishing up projects so we can go to the football game that Saturday.

*What did you do after graduating?*  
I went on to become a Packaging Engineer at Pinnacle Foods— which is now part of Conagra Brands. I moved to New Jersey where I stayed for 7 more years working in Packaging for brands like Birds Eye frozen veggies, Duncan Hines cake mixes, Victoria’s Secret, and Bath & Body Works signature collections.

*What are you doing now?*  
I am a Principal Packaging Engineer for Lamb Weston working on the different strategic ways to expand innovation across the french fry and frozen vegetable world.

*How did the ABE Department impact your life?*  
Everyone in ABE just wanted every student to succeed. I always felt like I was part of a family here and of course it helped that I had a lot of great friends surrounding me here. I was always treated as one-of-a-kind student and I was allowed to work for some great companies on co-ops that taught me so much about my line of work but also gave me great life experiences.
Tori Morgan
2020, B.S. Agricultural and Biological Engineering

What is your fondest memory of ABE?
The thanksgiving socials or any GSO event where professors and students got to hang out (i.e. tailgating events or events at Kiker’s house)! I also loved spending time with my mentees and doing things like painting pottery or dressing up for Halloween with Raminder.

What did you do after graduating?
I went to do a postdoc at the university of Illinois to pursue academia but wanted a changed of pace my last year and found a sustainability analyst engineering job in consulting at Hazen and Sawyer when I get to help Orlando, St. Pete, and Gainesville clients achieve their sustainability goals.

What are you doing now?
I am an assistant engineer at Hazen and Sawyer where I get to do pilot studies of water treatment technologies, economic and environmental sustainability analyses to help clients receive Envision certifications (like LEED for buildings), and do water and wastewater treatment design.

How did the ABE Department impact your life?
It gave me a different perspective to engineering like the multi criteria decision analyses skills that I use now in my current job. People are always fascinated when I come from a biological engineering feld and the people and projects I got to work with internationally.
At the University of Florida Agricultural and Biological Engineering Department’s centennial celebration in Gainesville, President Dana Porter and Darrin Drollinger were honored participants. The event included a networking reception and BBQ dinner at the Austin Cary Forest Campus, featuring an inspiring talk by retired UF women’s soccer coach Becky Burleigh.

The next morning, Kati Migliaccio, department chair and professor, led the ceremonies, concluding with Dana and Darrin presenting her with a plaque marking the department’s incredible milestone. As a testament to their commitment to advancing agricultural and biological engineering, Dana and Darrin were given an exclusive tour of the department by Kati, providing them with a firsthand look at the exciting research poised to shape the next century.

The celebration was a resounding success, marking a century of excellence for UF ABE and setting the stage for a future defined by innovation and progress in the field. Now, the commemorative plaque stands proudly within the department, serving as a timeless reminder for present and future staff, students, and faculty. It symbolizes the profound impact of a century’s worth of dedication and innovation and inspires them to persist in their mission of shaping lives and landscapes for another century to come.
ABE 2023 Celebration L to R: UF Women’s Soccer Coach, Becku Burleigh, speaking at the 100 Year Ceremony | Sisters and UF ABE Alumni, Tori and Savannah Morgan | Former ABE staff member, Max Williams, performs at the celebration with band Boilin’ Oil | UF ABE Alumni, Del Bottcher, poses with his wife at the centennial celebration | Current ABE staff memebrs Daphne Flournoy, Shannon Noble, and McKenzie Wynn at the 100 Year Celebration. | ABE students talk amongst themselves at the centennial celebration | UF ABE assistant professor Willingthon Pavan poses with UF/IFAS Vice President Scott Angle
ABE 2023 Celebration L to R: Dorota Haman & Saquib Mukhtar sitting at the 100 Year Ceremony | Past Chair, Direlle Baird, enjoying cake at the 100 Year Ceremony | 1962 ABE graduate Alton Robertson & his wife Patricia | Past Chair, Gerry Issacs at the Centennial Celebration | Executive Director of Advancement Cody Helmer & ABE Professor Eban Bean pose for a fun photo at the Centennial Celebration | ABE Grad students chatting at the Centennial Celebration | ABE Alumni Jean Pompano, Savannah Morgan, & Tori Morgan at the Centennial Celebration | Advisory Board member, Del Bottcher, speaking about his experience at the Centennial Ceremony | Chair & Professor Kati Migliaccio & Jodi Scholtz, cut the 100 Year cake at the Centennial Ceremony
NEW FACULTY & STAFF

Vijaya Joshi
Research Assistant Scientist

Nargiza Ludgate
Research Assistant Scientist

Willingthon Pavan
Assistant Professor, Modeling Cropping Systems

Kristen Aslan
Research Administrator I

Zach Moore
Engineer I

Tyler Santos
End User Computing Specialist II

2005
American Society of Agricultural Engineers (ASAE) changed their name to American Society of Agricultural and Biological Engineers (ASABE.)

2012
The undergraduate Agricultural & Biological Engineering degree program became Biological Engineering.
Faculty, Staff, and Alumni Awards

- Max Wallace 2023 FLASABE Young Engineer Award
- Xu “Kevin” Wang 2023 FLASABE Young Extension Worker Award
- Vivek Sharma 2023 FLASABE Young Researcher Award
- Adam Watson 2023 FLASABE Distinguished Achievement Award
- Young Gu Her 2023 FLASABE Outstanding Service Award
- Ying Zhang 2023 FLASABE Young Educator Award
- Daniel Rutland 2023 FLASABE Professional Engineer Award
- Adam Watson 2023 ASABE Gale A. Holloway Professional Development Award
- Vivek Sharma 2023 ASABE Young Extension Worker Award

Student Awards

- Bibek Acharya Summer 2023 Water Institute Travel Award
- Fitsum Teshome placed 2nd in the 2023 FLASABE Grad Student Presentation Competition
- Kennedy Belknap 2023 FLASABE Outstanding Student Award
- Olga Shashkina Society of Risk Analysis Student Merit Award
- Akshra Athelly placed 1st in the UF ABE Three-Minute Thesis Competition
- Spencer Serrano placed 2nd in the UF ABE Three-Minute Thesis Competition.
- Zijiang Huang placed 3rd in the UF ABE Three-Minute Thesis Competition

This design serves as a tribute to a century of agriculture and biological engineering at the University of Florida. Commemorative pins were crafted from this design and shared at the centennial events, ensuring everyone remembers this milestone for years to come.

2015
The Ken and Cindy Campbell Graduate Student Travel Scholarship was established.
2023 GRADUATES

Doctoral and Master's Degree Graduates

**Eduart Botache**
Master of Science (M.S.)
Bioprocess Engineering
Advisor: Dr. Pratap Pullammanappallil

**Pratiksha Sharma**
Master of Science (M.S.)
Information Systems - Machine Learning
Advisor: Dr. Nikolay Bliznyuk and Dr. Albert De Vries

**Kathleen Chan**
Master of Science (M.S.)
Non-Thesis Agricultural and Biological Engineering
Advisor: Dr. Ana Martin-Ryals

**Shreeja Sreekumar**
Master of Science (M.S.)
Process Modeling and Sustainability
Advisors: Dr. Ziynet Boz

**Tanapol Leelertkij**
Master of Science (M.S.)
Controlled Environment Agriculture
Advisor: Dr. Ying Zhang

**Yue Zhang**
Doctor of Philosophy (Ph.D.)
Environmental Engineering
Advisor: Dr. Bin Gao

**Morgan Morrow**
Master of Science (M.S.)
Water and Nutrient Management
Advisor: Dr. Vivek Sharma

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**2013**
Biological Systems Modeling certificate was launched.

**2020**
Faculty led the development of the Circular Bioeconomy Systems initiative, sparking the creation of a new institute within ASABE.

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1923 - 2023

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100 years

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UE

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ABE

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1923 - 2023
## 2023 GRADUATES

### Fall & Summer 2023 Bachelor's Degrees

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<thead>
<tr>
<th>Name</th>
<th>Degree</th>
<th>Major</th>
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<tbody>
<tr>
<td>Ryan Anderson</td>
<td>Bachelor of Science (B.S.)</td>
<td>Biological Engineering</td>
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<tr>
<td>Raymond Andresen</td>
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<td>Kennedy Belknap</td>
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<td>Stephen Boyd</td>
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<td>Zain Irani</td>
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<td>Erin Kallin</td>
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<td>Shaokang Yuan</td>
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<td>Brissa Bailon</td>
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<td>David Cathey</td>
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<td>William Thuesen</td>
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### 2022

- Applications in AI-based SmartAg Systems and Advanced SmartAg Systems certificates were launched.

### 2023

- Online non-thesis MS degree was launched.
- ABE celebrated 100 years!
UF/IFAS Agricultural and Biological Engineering Department

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abe.ufl.edu

Your generous donation to the UF/IFAS Agricultural and Biological Engineering program will provide support for our students, faculty and staff.

To support ABE, our scholarships and more, visit abe.ufl.edu/give.