



BIOCOMPLEXITY

SUSTAINABILITY

CIRCULARITY

The Colors of Research

SPRING 2022

Spring 2022

UF/IFAS Agricultural and
Biological Engineering
Department

Kati Migliaccio
Professor and Chair

120 Frazier Rogers Hall
PO Box 110570
Gainesville, FL 32611

352-392-1864

abe.ufl.edu

Editor
McKenzie Wynn

Copy Editors
Kati Migliaccio
Shannon Noble

Writers
Eban Bean
Kati Migliaccio
Shannon Noble
McKenzie Wynn
Ying Zhang

Graphic Designer
McKenzie Wynn

 @UF_ABE

 /ufloridaabe

 @UF_ABE


 /groups/12139978/

Table of Contents

Featured Stories

| | |
|--|----|
| THE COLORS OF RESEARCH | 4 |
| URBAN WATER RESOURCES ENGINEERING | 5 |
| IMPROVING ENERGY USE EFFICIENCY IN INDOOR FARMING | 6 |
| ABE POSTER SYMPOSIUM | 9 |
| STUDENT SPOTLIGHT IN KENYA | 10 |
| 2022 DISTINGUISHED ACHIEVEMENT, SERVICE AND ALUMNI AWARDS | 12 |
| SPRING RECAP | 15 |

Awards and News

| | |
|--|----|
| ABE WELCOMES NEW STAFF AND FACULTY | 8 |
| AWARDS AND ACCOMPLISHMENTS | 14 |

Graduating Students

| | |
|-------------------------------------|----|
| DOCTORAL AND MASTER'S DEGREES | 16 |
| BACHELOR'S DEGREES | 16 |

ABE Friends,

Look around...everywhere you turn someone is talking about Artificial Intelligence (AI)! If you've ever said "Hey, Siri!" or "Hey, Google!" you have used AI to help answer questions, solve problems, or even play games. AI is everywhere, and it is rapidly changing our everyday lives even if we can't see it. UF is ahead of this curve and has launched an AI initiative that reaches across all aspects of the university. The effort is a response to US National needs for AI and technology experts for workforce, Florida's efforts toward Academic and Workforce Alignment, and \$50 million investment at UF by NVIDIA with a matching \$20 million from UF.

UF and the Institute of Food and Agricultural Sciences (IFAS) are fully behind this initiative. ABE has benefitted with four new faculty positions in AI, resources for AI and teaching, and engagement with AI in agriculture committees, conferences, and workshops. As you know, ABE faculty have been engaged with AI a long time and are leaders for integrating domain knowledge in agricultural and natural resource systems with AI tools. Now, we are expanding in this area and bringing greater resources to support our students and stakeholders.

AI fits nicely into our research expertise, which can be seen by our research spinner (cover and pg 4). While AI is a component of our research portfolio, the greater benefit for ABE faculty and students is the connection of AI with the other expertise our faculty have. Right now, ABE research is expressed in three dimensions: **approach**, **domain**, and **scale**. The breadth and depth you see in the different research combinations with the approach, domain, and scale expertise, showcase the extraordinary range of research in the department. AI provides one more approach that we can use to help solve biocomplex problems with solutions that consider a system's sustainability and circularity, increasing our tools and options for solving these problems.

This issue is dedicated to showcasing the new visual describing ABE research considering the three dimensions of (1) **approach**, (2) **domain**, and (3) **scale**. Given our complexity, one dimension was not enough! With the many different challenges we face and the expertise we have, we may identify multiple ways to spin this! The idea of 'spinner' provides for the flexibility that ABE research could be any combination of the three dimensions.

Note the ABE research spinner is a process in development, so your comments are welcome as you see the spinner and content throughout the update. We are continually striving to find ways to better communicate our expertise to stakeholders, alumni, students, and partners. I hope you enjoy the spring issue of our ABE Update!

Go Gators!

Kati Migliaccio

Chair and Professor



KATI MIGLIACCIO, PH.D.
CHAIR AND PROFESSOR

[@hydroKati](#)

#5

Graduate Biological/
Agricultural Engineering
Program by U.S. News and
World Report

#5

Public University by U.S.
News and World Report

#12

Undergraduate Biological/
Agricultural Engineering
Program by U.S. News and
World Report

The Colors of Research

By Kati Migliaccio, Department Chair

Over the past year, faculty in the department have had multiple discussions and a retreat about how we represent our research to others. Our research programs are complex, multidisciplinary, and typically have spatial and temporal components. The question was how to showcase this in a way that is inclusive of our expertise but also manageable to read or visualize by a broad audience of students, stakeholders, and other professionals.

The graphic shows the over-arching themes in our research programs:

circularity, **sustainability**, and **biocomplexity**. The blue circle represents the different **approaches** we apply, while the orange circle provides the **domains**. The inner circle represents the different spatial **scales** of ABE research. Each can rotate independently showcasing the tri complexity and different pairing among the 3 variables.

Agricultural and Biological Engineering (ABE) research focuses on the design and assessment of innovative solutions towards more sustainable living systems and their components, processes, and interactions. Whether natural or engineered, these bio-complex systems can operate from the nano/cellular to global scales. The goal of research conducted at ABE is to design system solutions that promote greater circularity and sustainability considering economics, social sciences, and other driving factors. Research at ABE therefore integrates multidisciplinary teams and cuts across several domains and areas of specialization. Considering the broad nature of the ABE program, here are a few **domains** ABE research includes:

Agricultural production – includes controlled environments, field and specialty crops, animal systems, and agronomic management.

Bioenergy/bioproductions – includes anaerobic digestion, biofuel production, bioplastics with a focus on waste reduction and reuse of byproducts.

Built Ecosystems – includes green infrastructure, stormwater management and control, engineering urban soils for greater ecosystem function.

Climate and weather – includes climate variability, climate change and weather quantification, trend identification, and forecasting.

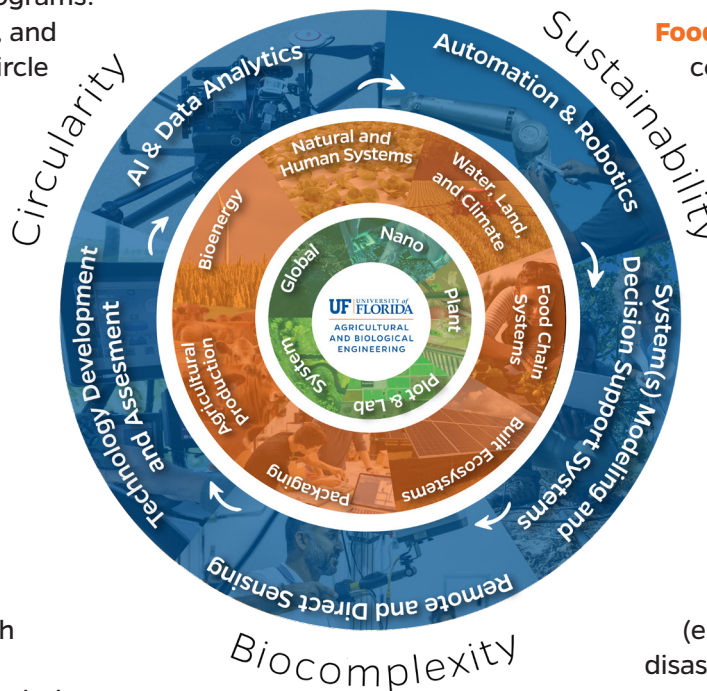
Food Chain Systems – includes components related to food preproduction/production phases (process food and fresh horticultural products), packaging, transportation and distribution, waste reuse, and life cycle considerations.

Natural and Human Systems – includes human impacts on natural systems (such effects of land management on climate and nutrient & water cycles) and the impacts of natural systems on humans, and their responses to change (e.g., natural disasters, socially driven disasters).

Packaging – includes research on extending shelf life, preserving the nutritious value of foods, food and non-food material safety, improving end-of-lifecycle outcomes for packaging materials, new innovative material variants and other byproducts of the packaging process.

Water quality and quantity – includes all components of the hydrologic cycle and different land use types; agrochemical and nutrient transport; ecosystem services.

Different **approaches** are applied by ABE researchers in these domains, including **AI and data analytics**; **automation and robotics**; **decision support systems**; **remote and direct sensing and control**; **systems modeling**; and **technology development and assessment**.



Urban Water Resources Engineering

By Eban Bean, Assistant Professor

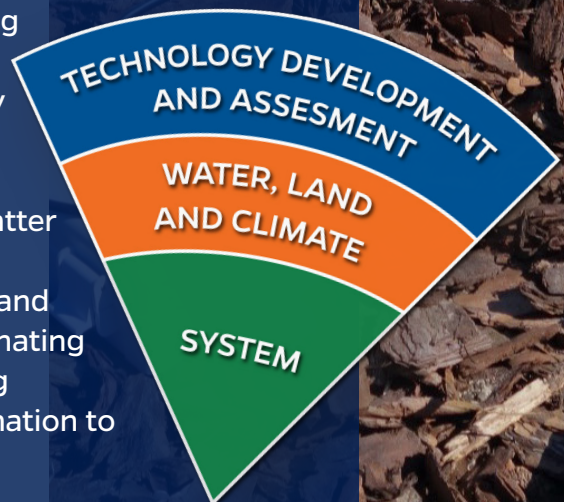
 @EbanBean

CIRCULARITY

As Florida's population continues to set new records and urban areas expand, agricultural and biological principles remain relevant in these areas transformed into built ecosystems. The impacts of growth on water supply and water quality are evident across much of the state and beyond, with water demand exceeding available supplies and algal blooms becoming more and more common.

Within the Urban Water Resources Engineering group, we apply principles and approaches from traditional agricultural contexts within the urbanizing and built environment. Our focus is on enhancing the ecosystem functions of urban areas for a more sustainable future by developing and assessing new technology. From enhancing soil quality and water holding capacity through amendments, to designing green stormwater infrastructure for watershed protection, and locating sources of pollutants, our solutions must function across a range of scales, from the rootzone or individual lot to the watershed, and beyond.

Through our work with the urban landscaping and building industries, we are developing cost-effective solutions that integrate into their processes and will create a legacy of urban sustainability for the future. We use compost, which is produced from waste materials typically sent to landfills, to incorporate valuable nutrients and organic matter that improve soil health, requires 50% less irrigation, and reduces runoff. We are designing areas to capture, treat, and retain stormwater onsite to limit pollutants from contaminating our receiving waters. Low-cost water resource monitoring systems, like GatorByte, will provide the necessary information to identify and manage pollutant sources.





Improving Energy Use Efficiency in Indoor Farming Systems

By Ying Zhang, Assistant Professor

In indoor farming systems, environmental variables including air temperature, humidity, air exchange rate, and CO₂ concentration can be precisely controlled to optimize plant growth.

Heating, ventilation, and air conditioning (HVAC) systems play a vital role in maintaining the desired environment through heating, cooling, humidifying, and dehumidifying processes. Not surprisingly, this extensive climate control comes at a cost: Electricity consumption is one of the major costs in indoor farming operations. The electricity use of the HVAC system is the result of system design and operation, which is mainly determined by the internal energy loads, the building characteristics, and the exterior climate conditions.

Due to the closed nature of indoor farming, the internal energy loads dominate the energy balance in indoor farms. With the massive heat gain from grow lights, indoor farms generally require cooling rather than heating to maintain desired air temperature setpoints.

Reducing the cooling load is the key to reducing the HVAC electricity usage for indoor farming systems. Therefore, potential energy-saving strategies could be choosing the farm location under a cold climate, shifting the photoperiod to avoid high cooling demand during the peak heat of a day, using efficient lights to reduce the total heat gain, or designing façade constructions to reduce cooling loads. Besides, manipulating temperature setpoints could be another potential strategy for energy saving. To evaluate the effectiveness, the responses of the crop to the changes in temperature need to be integrated. This is one of the challenges of developing environment control algorithms in indoor farms. Another key factor that significantly affects the indoor environment and the energy balance of the system is crop transpiration. Crops convert a large amount of sensible heat into latent heat by evaporating water into the air during transpiration. It then significantly changes the cooling and dehumidifying loads. Crop transpiration models that have been developed for natural sunlight need to be modified to predict the heat and water fluxes of crops grown indoors under artificial lighting.

To improve the energy use efficiency in the indoor farming system there are three main modules to integrate for energy simulation and modeling: crops models to predict yields under different climate settings, energy models to simulate energy consumption, and an integrated management system to optimize control algorithms. Dr. Zhang is working with two MS students, Jean Pompeo and Tanapol Leelertkij, to collect experimental data and develop models for the modules.

Jean is conducting experimental studies to evaluate the combined effect of air temperature and root-zone temperature on lettuce growth and energy-saving. The growth data collected will be used to develop crop models to support future studies.

Tanapol is developing crop transpiration models for indoor farming. The models will be integrated into the governing equation for energy simulation for indoor farms. He will then integrate key parameters that could affect the energy consumption of the system to develop optimized control algorithms for saving energy.

The goal of Dr. Zhang's program is to develop a smart indoor farming system for sustainable agriculture.

Energy modeling and simulation is the key to improving system sustainability. The expected outcome of the project is a developed climate-smart air and root-zone temperature control system that minimizes the energy usage of the HVAC system while maintaining the optimized growth rate of the lettuce.



Graduate student Tanapol Leelertkij removes lettuce plant from growth chamber for further study.

Expand Your Research at ABE

Earn Your MS Degree *Online*

#5

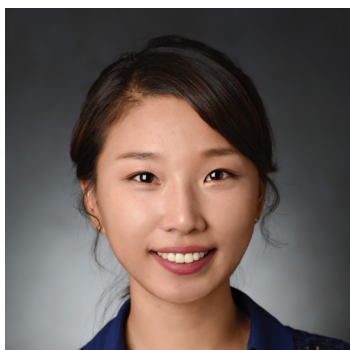
— Be a Gator, Anywhere —

Graduate Program in Biological and Agricultural Programs in the Nation

U.S. NEWS & WORLD REPORT, 2021

Learn More at go.ufl.edu/abeonlinems

ABE Welcomes New Faculty & Staff



Dana Choi

Assistant Professor

 @DaDa_Rang

Daeun (Dana) Choi is an agricultural engineer working as an assistant professor at Gulf Coast Research and Education Center (GCREC). Dana's research focuses on developing field robotics and AI in agriculture. Two significant research areas of her lab are: (1) intelligent sensors for accurately monitoring field variables in agriculture, and (2) automated multi-robot systems using drones, robots, data, and information and communications technology (ICT).



Henry Medeiros

Associate Professor

 @henrypmedeiros

Henry Medeiros is an Associate Professor in the Agricultural and Biological Engineering department at the University of Florida. His research focuses on the development of novel artificial intelligence models and robotic systems to improve agricultural production.



Dan Hofstetter

Assistant Professor

Dan Hofstetter is a Professional Engineer and Assistant Professor in the Agricultural and Biological Engineering department at the University of Florida. His professional experience includes precision agriculture, machine design, and manure separation facility design. Recent research topics include measurement of indoor air contaminants in animal housing and computational fluid dynamics (CFD) simulation of airflow in agricultural buildings.



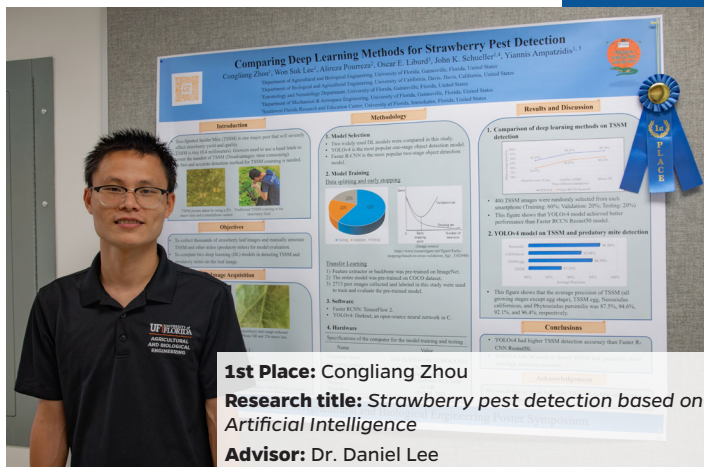
Janice Dees

Research Administrator I

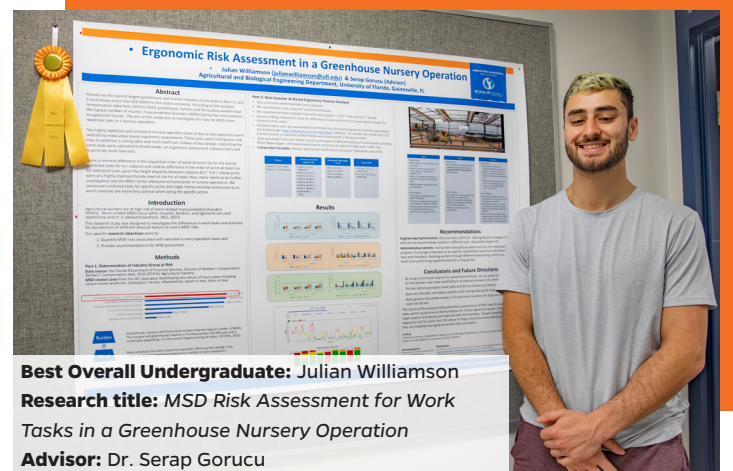
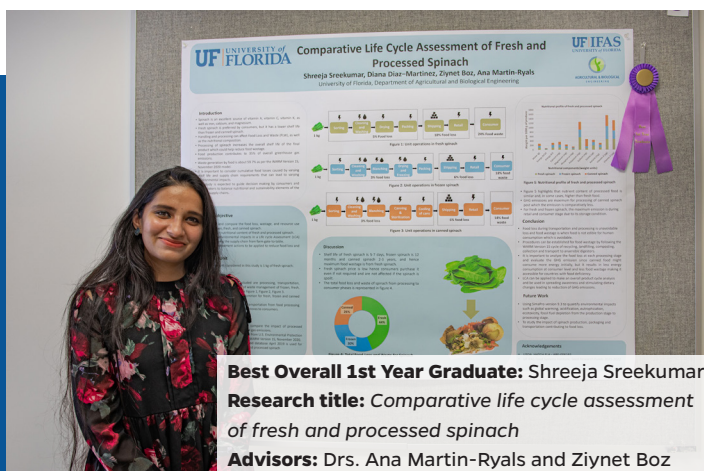
Janice Dees earned her BA in English from UF in 2011 and her MLIS from FSU in 2014. She has over a decade of experience in public and academic libraries and has served multiple communities in Florida and New York. In her previous role at UF, Janice supported students, staff, and faculty as Access Services Manager of the Education Library. In her new role as Research Administrator I, Janice prepares grant proposals for ABE faculty and assists in post-award grant management. Originally from Winter Haven, Janice is a native Floridian who enjoys reading, writing, drawing, and crochet.

ABE's Poster Symposium 2022

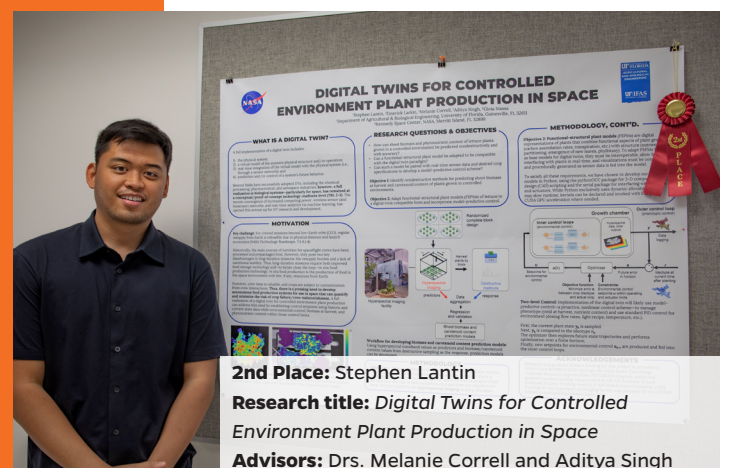
By Shannon Noble, Education Coordinator



March 28, 2022, brought back the in-person **ABE Poster Symposium**. By sharing their research at this event, students could present and discuss their research, hear other's perspectives on their project, and further generate innovative ideas or collaborations with colleagues. One of the many benefits of the ABE poster event is that it allows early-stage graduate student researchers the opportunity to focus their research message and problem and gain confidence in presenting their ideas to others.



Undergraduate researchers also benefit and get to experience, present, and learn about the diverse research in ABE. At this year's poster event **thirty students** presented their work- eight were first year graduate students and three were undergraduate students. Twenty-two judges, including faculty, postdoctoral researchers, and visiting scholars, evaluated the posters and listened to the student presenters to decide on the top poster presentations for the event. Congratulations to the students who placed as the top poster and presenters and won cash prizes and recognition for their work.



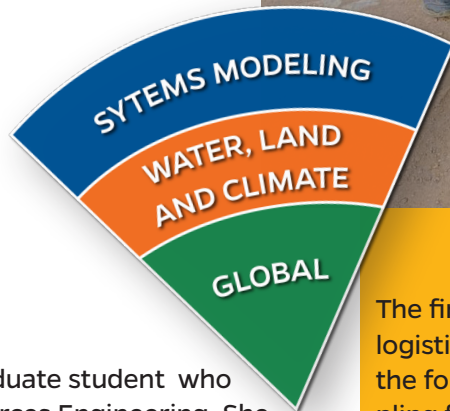
Student Spotlight in Kenya

By Taisha Venort & Lory Willard

Advisors: Drs. Cheryl Palm & Rafael Muñoz-Carpena



Taisha and Lory with the field work team.
[Back, left to right] Taisha, Raymond (The team's driver), George (Lab and field assistant).
[Front, left to right] Lory, and David, our field assistant and involved farmer.



Taisha Venort

 @TaishaVenort

Taisha Venort is an ABE graduate student who studies Land & Water Resources Engineering. She became involved with the research group working in Kenya upon starting her doctoral journey, as she had a keen interest in conducting research around water and food security related topics internationally.

Taisha's research in Kenya focuses on understanding feedback between producer decisions and ecosystem services at the field and landscape scales. She used a capital assets framework to develop and apply quantitative modeling approaches that link producers' decision-making factors (i.e., households' assets, management variables) to biophysical factors (i.e., crop yield, hydrologic and soil quality responses).

The field-based component of Taisha's research included implementing a soil sampling campaign to collect soil properties data on fields in and near the watershed of interest (the Nanyuki river watershed).

Their team traveled to Laikipia mid-January to implement the campaign.

The first two weeks were used to appraise and test the logistics and feasibility of the measurements in field. In the following 4 weeks, the team was in the field sampling from Mondays to Thursdays. On the weekends, they rested, socialized with students and researchers at the MPALA research center, prepared the sites for the next week, entered data, and conducted laboratory analyses. By the end of February, they were able to satisfactorily sample a total of 43 fields.

"Joining Dr. Palm and Dr. Munoz-Carpena's Kenya research project was the perfect fit for my career interests. We are grateful for the tremendous amount of support we got from our local partners (The MPA-LA research center, The Nature Conservancy office in Kenya) who provided us with the logistics means and human capital needed. This work is really the fruit of a great extensive collaborative effort."

Taisha is currently working on the implementation of a short household survey for the fields they sampled. This survey will help capture key household assets and detailed farm and field level management information they fell short to obtain during their soil sampling campaign.

Lory Willard

 @LoryWillard

Lory Willard is an ABE graduate student who studies biocomplexity modeling with a focus on hydrology towards a PhD in ABE. Lory was able to join Dr. Palm on a study abroad trip to Kenya during her first summer at UF, and from there they were able to secure grant funding from The Nature Conservancy to conduct work in Kenya with Dr. Munoz-Carpena.

Lory's research focuses on quantifying the effects of sustainable intensification on streamflow and wildlife in Laikipia, Kenya. This includes evaluating impacts of reduced tillage and drip irrigation on water movement and identifying how adoption of practices throughout a watershed impacts timing and frequency of droughts.

Lory has been able to have several great experiences in Kenya through this project. During the study abroad in 2019, Lory and her team were able to collect preliminary data and become familiar with the field methods they planned to use during the project. During 2020 and 2021, they collaborated with colleagues in Kenya to develop and build a stream monitoring network that includes 8 streamgages and 5 rain gauges throughout the watershed.



Taisha Venort packing a soil composite with George, their lab assistant. A composite is collected for each field sampled.

BIOCOMPLEXITY



Lory and John Gitonga (Mpala Research Centre) posing with soil sampling equipment in Mount Kenya Forest. John has worked with their team since 2019 coordinating field work, constructing & maintaining river & rain gauges, & building relationships with the local community for a more resilient & impactful project.

This work included engaging with the local Water Resources Administration to conduct stream surveys. In 2022, they conducted extensive soil testing throughout Laikipia, including sampling 43 fields for soil physical properties, including bulk density, infiltration, and penetration resistance, and soil chemical properties. Their home base is Mpala Research Centre, which is a hub for international field researchers working in Kenya.

“Each trip has been a great learning experience in international collaboration and research. Staying at Mpala provides a unique opportunity for learning about other research in Laikipia, meeting young Kenyan scientists, and viewing amazing wildlife.”

As Lory wraps up her PhD work, her focus is now on model development, data analysis, and results dissemination for this project.

2022 Distinguished Achievement,



DISTINGUISHED ALUMNUS/ALUMNA AWARD

MICHAEL REGISTER

EXECUTIVE DIRECTOR AT ST. JOHNS RIVER
WATER MANAGEMENT DISTRICT

Michael Register is a registered professional engineer in Florida with a Master of Engineering and Bachelor of Science in Agricultural Engineering from the University of Florida. Upon graduating, he began his professional career as an engineer working for the St. Johns River Water Management District. During his 31-year career at the District he has worked in the District's regulatory, engineering, ground and surface water modeling, water supply planning, and minimum flow and levels programs. During his time leading the regulatory programs, he oversaw the development and adoption of minimum flows and levels for 5 Outstanding Florida Springs (including the iconic Silver Springs) ensuring their protection for future generations. In 2021, Michael was selected to lead the organization as its new Executive Director. Michael lives in his hometown of Seville, Florida with his wife of 35 years on their family farm.



DISTINGUISHED ALUMNUS/ALUMNA AWARD

SUAT IRMAK

ABE PROFESSOR AND DEPARTMENT HEAD
THE PENNSYLVANIA STATE UNIVERSITY

Suat Irmak received his Ph.D. degree from the Agricultural and Biological Engineering Department at the University of Florida with the emphasis on Land and Water Resources Engineering. After joining University of Nebraska-Lincoln in 2004 as an Assistant professor, he received his Full Professorship in 2012 and Harold W. Eberhard Distinguished Professorship in 2013. He joined Penn State in 2021 to serve as a Professor and Department Head of Agricultural and Biological Engineering. He has made significant contributions and exhibited exemplary accomplishments in soil and water resources and irrigation engineering, soil and water conservation, agricultural water management, evapotranspiration, impact of climate change on water resources and agricultural and natural resources productivity, and environmental biophysics.



OUTSTANDING YOUNG ALUMNUS/ALUMNA AWARD

ALLISON MICA

BACARDI, PROJECT MANAGER

Allison Mica is a fifth generation Floridian and loves the beautiful state of Florida. Originally from Tallahassee, FL, she graduated from UF in 2012 with a Bachelor of Science in Packaging Science and in 2017 with her MBA. Allison is a member of Florida Blue Key, Kappa Delta, and the Florida Cicerones at the University of Florida, which holds a very special place in her heart. Her career started as a Packaging Engineer in spirits industry in 2012. Currently she works for Bacardi, recently transitioning into the global supply chain team as the Bacardi Supply Chain Brand Manager. Previously with Bacardi she was leading and supporting innovations through the Packaging and Project Management teams. Allison currently resides in Jacksonville, FL. Outside of work, she has a passion for volunteering, reading, enjoying a delightful cocktail, and cheering on the Gators.

Service, And Alumni Awards



OUTSTANDING YOUNG ALUMNUS/ALUMNA AWARD

GLORIA TEAGUE

WATER RESOURCES ENGINEER
GEOSYNTEC CONSULTANTS, INC.

Gloria Teague has over 10 years of professional experience managing, designing, implementing and evaluating water resource projects for clients in public and private sectors. She specializes in hydrologic/hydraulic modeling as well as development of software tools to support data analysis, visualization and quality assurance/quality control – she is highly skilled in quantifying spatial/temporal impacts and incorporating forecasts of future conditions to propose strategies for adaptive management. Ms. Teague currently assists with efforts in urban stormwater management such as data analytics, best management practice (BMP) evaluations, stormwater master plans, and geospatial analysis.



DISTINGUISHED ACHIEVEMENT AWARD

ELDON MULLER

RETIRED MANAGER OF WORLDWIDE SAFETY CRITICAL
PROCESSES FOR THE WALT DISNEY COMPANY

Eldon Muller is a graduate of the University of Idaho holding both a BS (1980) and MS (1982). His graduate work was analyzing physiological losses in Sugar Beet storage from root damage caused by equipment used in their piling. In 1982 he took a position with the Walt Disney Company helping to open The Land at Epcot Center a 40,000 controlled environment agriculture facility. Eldon worked for Disney until November 2021 when he retired as the Manager of Critical Process Analysis for Disney Parks and Resorts Worldwide Safety.



DISTINGUISHED SERVICE AWARD

BILL RECK

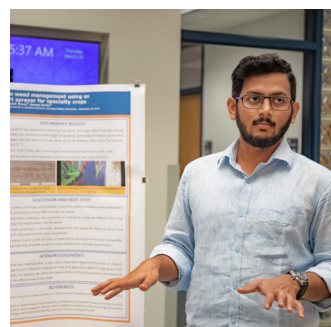
USDA NATURAL RESOURCES CONSERVATION
SERVICE, NATIONAL ENVIRONMENTAL ENGINEER

Bill Reck, P.E. is the USDA Natural Resources Conservation Service, National Environmental Engineer. Bill has over 25 years' experience in wetland restoration and treatment, design and evaluation of conservation practices, and extensive experience in the area of animal waste management structural design as well as evaluation of existing structures. Currently, Bill has national responsibility for NRCS's 20 environmental engineering conservation practice standards which includes waste management, mortality management, agrichemical handling facilities, and on-farm secondary containment of petroleum products.

Awards and Accomplishments

- **Adam Watson** 2021-2022 CALS Early Career Excellence in Teaching Award.
- **William Pelletier** 2021-2022 CALS Early Career Excellence in Teaching Award.
- **Jessica Abbate**, UF ABE's Admin Support Assistant, awarded the Superior Accomplishment Award at the IFAS and University level.
- **Cheryl Palm** and **Ziyne Boz** awarded the Global Fellow Award.
- **Ziyne Boz** received the Global Fellows Award from UF International Center.
- **Cheryl Palm** received the 2022 UF/IFAS International Research Fellow Award.
- **Young Gu Her** received the International Educator Award for the College of Agricultural and Life Sciences.
- **Gloria Teague** received the 2022 ABE Outstanding Young Alumnus Award.
- **Allison Mica** received the 2022 ABE Outstanding Young Alumnus Award.
- **Bill Reck** received the 2022 ABE Distinguished Service Award.
- **Eldon Muller** received the 2022 ABE Distinguished Achievement Award.
- **Mike Register** received the 2022 ABE Distinguished Alumni Award.
- **Suat Irmak** received the 2022 ABE Distinguished Alumni Award.
- Graduate student **Lory Willard** received the Research for Doctoral Students Award from University of Florida International Center.
- Graduate student **Kyle Griffin** received the ABE Graduate Student Mentoring Award for his incredible service to his peers and to undergraduate students.
- Graduate student **Eduart Murcia Botache** received the ASCE STAR Fund Award. He will use this award to attend the EWRI Congress 2022.
- Graduate student **Chi Zhang** received the 2022 McNair Bostick - Student Scholarship.
- Graduate student **Joe Barrett Carter** received the 2022 McNair Bostick - Student Scholarship.
- Graduate student **Oscar Castillo-Romero** received the 2022 Campbells Scholarship.
- Graduate student **George Worrall** received the 2022 Campbells Scholarship.
- Undergraduate student **Jacob Cutts** received the Allen G. Smajstrala Scholarship.
- Undergraduate student **Luke Hatton** received the Rush E. Choate Scholarship.
- Undergraduate student **Griffin Lay** received the Sun Fu "Tony" Shih Scholarship.
- Undergraduate student **Julie Peeling** received the 2022 Florida Section ASABE Scholarship Fund.
- Undergraduate student **Ashley Sarkees** received the 2022 Florida Section ASABE Scholarship Fund.
- Undergraduate student **Nyssa Gunthorp** received the 2022 Florida Section ASABE Scholarship Fund.
- Undergraduate student **Lejla Ramic** received the John B. Boy/U.S. Sugar in Agricultural Engineering Fund.
- Undergraduate student **Juan Daniel Cornu Sanchez** received the John B. Boy/U.S. Sugar in Agricultural Engineering Fund.
- Undergraduate student **Michelle Ezequelle** received the John B. Boy/U.S. Sugar in Agricultural Engineering Fund.
- Undergraduate student **Sydney Ervin** received the 2022 Bob and Virginia Peart Scholarship Fund-student scholarship.
- Undergraduate student **Raymond Anderson** received the 2022 Marlin Eller Memorial MWI Corporation Scholarship - Student Scholarship.
- Undergraduate student **Kennedy Belknap** received the ASABE Student Recognition award.
- Undergraduate student **Nathan Bush** received the ASABE Student Recognition award.
- Undergraduate student **Juan Daniel Cornu Sanchez** received the ASABE Student Recognition award.
- Undergraduate student **Kyle Fuxa** received the ASABE Student Recognition award.

Spring 2022 Recap



(From left to right, top to bottom) Faculty, Students, and Staff enjoy the annual ABE Awards and Recognition Dinner. | ABE students show off their ABE swag for supporting ABE on Giving Day. | ABE Emeritus faculty enjoy the annual Emeritus faculty luncheon | Ph.D. Graduate student Vinay Vijayakumar presents his research at the annual ABE Poster Symposium. | ABE Faculty travel to Alabama to the #AlinAG Envisioning 2050 in the Southeast Conference. | Farm Babe visits ABE to learn more about our research and technology. | ABE Advisory Board visits East Campus to tour the HiPerGator Supercomputer. | ABE graduates pose for a photo before they walk the stage. | Dr. Cheryl Palm and PhD students Taisha Venort and Lory Willard sample 100 fields in Laikipia, Kenya studying sustainable intensification.

Doctoral and Master's Degree Graduates



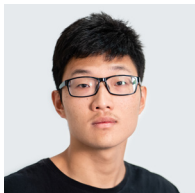
Emmanuel Ajayi

Doctor of Philosophy (Ph.D.)
Modeling and Agricultural Structures
Advisors: Drs. Greg Kiker and Ray Bucklin



Kathleen Vazquez

Doctor of Philosophy (Ph.D.)
Land and Water Resources Engineering
Advisors: Drs. Rafael Muñoz-Carpena and Cheryl Palm



Yi Han

Doctor of Philosophy (Ph.D.)
Statistics and Machine Learning
Advisor: Dr. Nikolay Bliznyuk



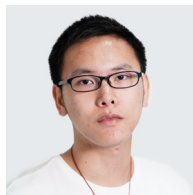
Ronald Fox

Masters Program (M.S.)
Land and Water Resources Engineering
Advisor: Dr. Eban Bean



Arianna Partow

Doctor of Philosophy (Ph.D.)
Biological Engineering
Advisor: Dr. Zhaohui Tong



Yushi Li

Masters Program (M.S.)
Bioprocess Engineering
Advisor: Dr. Ana Martin-Ryals



Bhagatveer Sangha

Doctor of Philosophy (Ph.D.)
Agribusiness and Farm Management
Advisor: Dr. J. Adam Watson

Bachelor's Degree Graduates

Juan Daniel Cornu Sanchez

Bachelor of Science (B.S.)
Biological Engineering

Michelle Ezequelle

Bachelor of Science (B.S.)
Biological Engineering

Taylor Hilton

Bachelor of Science (B.S.)
Biological Engineering

Cuong Dao

Bachelor of Science (B.S.)
Biological Engineering

Lindsey Feikema

Bachelor of Science (B.S.)
Biological Engineering

Alejandro Lovo

Bachelor of Science (B.S.)
Biological Engineering

Carsyn Drew

Bachelor of Science (B.S.)
Biological Engineering

Kyle Fuxa

Bachelor of Science (B.S.)
Biological Engineering

Emily Miller

Bachelor of Science (B.S.)
Biological Engineering

Bachelor's Degree Graduates

Matthew Mixon

Bachelor of Science (B.S.)
Biological Engineering

Colby Estes

Bachelor of Science (B.S.)
Agricultural Operations Management

Jaxon Purvis

Bachelor of Science (B.S.)
Agricultural Operations Management

Lejla Ramic

Bachelor of Science (B.S.)
Biological Engineering

Jonathan Infinger

Bachelor of Science (B.S.)
Agricultural Operations Management

Cameron Schneider

Bachelor of Science (B.S.)
Agricultural Operations Management

Ashley Sarkees

Bachelor of Science (B.S.)
Biological Engineering

Joshua Jantz

Bachelor of Science (B.S.)
Agricultural Operations Management

Julian Williamson

Bachelor of Science (B.S.)
Agricultural Operations Management

Veronica Tami

Bachelor of Science (B.S.)
Biological Engineering

Steven Ledon

Bachelor of Science (B.S.)
Agricultural Operations Management

Matt Winters

Bachelor of Science (B.S.)
Agricultural Operations Management

Paislyn Ellington

Bachelor of Science (B.S.)
Agricultural Operations
Management

Tyler Lilly

Bachelor of Science (B.S.)
Agricultural Operations Management

Congratulations
2022 Graduates

**UF/IFAS Agricultural and Biological
Engineering Department**

120 Frazier Rogers Hall
PO Box 110570
Gainesville, FL 32611-0570

352-392-1864
abe.ufl.edu



GIVING

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.

