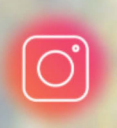


# **INSIDE TREC**



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## Director's Message

From the Director's Desk,

We are now in summer, but here on our Homestead campus it feels like the beginning of spring because every year around this time our campus comes alive with a noticeable influx of student interns, "green shoots" so to speak, popping up all over the campus—I met at least 10. These interns are being hosted by some of our outstanding faculty, providing them experiential learning opportunities to conduct scientific research in field and laboratory-based environments while being mentored in an inclusive and friendly environment. Through this experience we are furthering the University's mission of better equipping students to lead and influence the next generation and beyond and to solve real world challenges. These students come to us from various tertiary education institutions and, in a couple of cases, from local high schools.

Here is a sample of what they will be exposed to. One intern will work with Dr. Haimanote Bayabil, Assistant Professor in Agricultural and Biological Engineering, to evaluate the performance of commercially available smart irrigation technologies for water conservation from turf fields. In the process, the intern will learn how to conduct field research, collect research data, analyze observations, and communicate the results.

A second intern will work with Dr. Alan Chambers, Assistant Professor in Horticultural Sciences, on both field and lab research with some of our primary tropical species. Field-based activities will include plant maintenance and collecting yield data. Lab-related work will include molecular biology or processing fruit samples for yield components, sweetness, acidity, and/or aroma analysis to provide an In-depth understanding of data collection, analysis, and interpretation.

A third intern will work with Dr. Ashley Smyth, Assistant Professor in Soil, Water, and Ecosystem Sciences, on quantifying nitrogen removal in different mangrove stands to improve our understanding of the role mangroves play in pollution removal and how mangrove ecosystem functions are affected by urbanization. The intern will also receive training on cutting-edge instrumentation such as mass spectrometry and will learn about various nutrient cycles.

A fourth intern will work with Dr. Alexandra Revynthi, Assistant Professor in Entomology and Nematology, to develop sanitation practices to manage Hibiscus Bud Weevil that causes significant losses to nursery industry. Among other things, the intern will learn how maintain arthropod and plant colonies necessary to conduct research, design and conduct greenhouse and field research, collect research data and analyze observations, and to collaborate with other researchers.

A fifth intern will work with Dr. Geoffery Meru, Assistant Professor in Horticultural Sciences, using molecular biology techniques, such as DNA / RNA extraction from plants. The research will include Polymerase Chain Reaction (PCR), marker-assays, and basic data analysis and interpretation.

These are only a few examples of the internships that are being offered to our 'budding' scientists who will one day branch out to do their part to ensure that no matter the season, our planet is here to stay.

*Edward 'Gilly' A. Evans*



## Research Publications

- Chalal, K., **Gazis, R.**, Klingeman, W., Lambdin, P., Grant, J. Windham, M. Hadziabdic, D. (2022). Differential virulence among geosmithis morbida isolates collected across the United States occurrence range of thousand cankers disease. *Frontiers in Forest and Global Change*, 5. DOI: <https://doi.org/10.3389/ffgc.2022.726388>
- Duncan, R. E., Pena, J. E., **Carrillo, D.** (2022). *Tenuipalpus uvae* (Acari: Tenuipalpidae) and *Calophya spondiadis* (Hemiptera: Psyllidae), pests of *Spondias* in Florida, USA. *Florida Entomologist*, 105(1). DOI: <https://doi.org/10.1653/024.105.0113>
- Kendra, P. E., Tabanca, N., **Cruz, L. F., Menocal, O.**, Schnell, E. Q., **Carrillo, D.** (2022). Volatile emissions and relative attraction of the fungal symbionts of tea shot hole borer (Coleoptera: Curculionidae). *Biomolecules* 2022, 12(1), 97. DOI: <https://doi.org/10.3390/biom12010097>
- Menocal, O. A.**, Kendra, P. E., **Padilla, A.**, Chagas, P. C., Chagas, E. A., **Crane, J. H.** and **Carrillo, D.** (2022). Influence of canopy cover and meteorological factors on the abundance of bark and ambrosia beetles (Coleoptera: Curculionidae) in avocado orchards affected by Laurel Wilt. *Agronomy*, 12(3). DOI: <https://doi.org/10.3390/agronomy12030547>
- Navia-Urrutia, M.**, Sanchez-Pinzon, L., **Parra, P. P., Gazis, R.** (2022). A diagnostic guide for Laurel Wilt disease in avocado. *Plant Health Progress*. DOI: <https://doi.org/10.1094/PHP-12-21-0149-DG>
- Revynti, A. M., Cruz, L. F., Canon, M. A., Crane, J. H., Kendra, P. E., Mannion, C., and Carrillo, D.** (2022). Evaluation of abamectin as a potential chemical control for the lychee erinose mite (*Acari: Eriophyidae*), a new invasive pest in Florida. *Florida Entomologist*, 105(1). DOI: <https://doi.org/10.1653/024.105.0101>
- Revynti, A.**, Verkleij, D., Janssen, A., Egas, M. (2022). Artificial selection for timing of dispersal in predatory mites yields lines that differ in prey exploitation strategies. *Ecology and Evolution*, 12(3). DOI: <https://doi.org/10.1002/ece3.8760>
- Sanchez, F., Bassil, E., Crane, J. H., Shahid, M. A., Vincent, C. I., & Schaffer, B.** (2022). Spectral light distribution affects photosynthesis, leaf reflective indices, antioxidant activity and growth of *Vanilla planifolia*. *Plant Physiology and Biochemistry*, 182, 2022, 145-153. DOI: <https://doi.org/10.1016/j.plaphy.2022.04.020>
- Song, J., **Her, Y.**, Yu, X., **Li, Y., Smyth, A.**, M.H., W. (2022). Effect of information-driven irrigation scheduling on water use efficiency, nutrient leaching, greenhouse gas emission, and plant growth in south Florida. *Agriculture, Ecosystems, & Environment*, 333, 107954. DOI: <https://doi.org/10.1016/j.agee.2022.107954>
- Wu, X.**, Cortes, A. J., Blair, M.W. (2022). Genetic differentiation of grain, fodder and pod vegetable type cowpeas (*Vigna unguiculata* L.) identified through single nucleotide polymorphisms from genotyping-by-sequencing. *Molecular Horticulture*, 2(8). DOI: <http://dx.doi.org/10.1186/s43897-022-00028-x>



## EDIS Publications

- Bayabil, H., Li, Y., Crane, J. H., Schaffer, B., Smyth, A. R., Zhang, S., Evans, E. A., Blare, T. (2022). Saltwater intrusion and flooding: Risks to south Florida's agricultural and potential management practices. *EDIS*, 2022. (). DOI: <https://doi.org/10.32473/edis-ae572-2022>
- Blare, T., Rivera, M., Ballen, F. H., Brym, Z. (2022). Is a viable hemp industry in Florida's future? *EDIS*, 2022 (2). DOI: [10.32473/edis-FE1116-2022](https://doi.org/10.32473/edis-FE1116-2022)
- Revynti, A. M., Carrillo, D., Seal, D. R., Vassilaros, V., and Kendra, P. E. (2022). The horntail snail (*Macrochlamys indica*): A new invasive pest in Florida. *EDIS*, 2022. DOI: <https://doi.org/10.32473/edis-in1355-2022>
- Blare, T., Ballen, F., Singh, A., Haley, N., Contreras, V., Crane, J. (2022). Estimacion de la Rentabilidad y Costo de Produccion de Mango (*Magifera Indica* L.) en el Sur de la Florida: FE1118, 03/2022. *EDIS*, 2022 (2). DOI: <http://dx.doi.org/10.32473/edis-FE1118-2022>
- Blare, T., Rivera, M., Ballen, F. H., Brym, Z. (2022). Es la industria de canamo industrial rentable en el future de Florida? *EDIS*, 2022 (2). DOI: <https://doi.org/10.32473/edis-FE1117-2022>

## Coming up in ... Extension

**July**

### Eyes on Seagrass

Featuring: Dr. Ashley Smyth  
Audience: Sea Grant Agents,  
National Estuary Programs,  
FDEP

**August**

Emerging Ag Enterprises  
Summit: Crops, Livestock,  
& Aquaculture  
Featuring: Drs. Zachary Brym  
& Geoffrey Meru  
Audience: entrepreneurs,  
public/private growers



## Research Report

In this segment of the Research Report, Dr. Zachary Brym provides us with an update on the research emanating from his lab.

First, his lab has labeled plants and a set of “tour stops” highlighting the plant diversity that can be found at the UF/IFAS Tropical Research & Education Center. His lab has identified more than 750 plant species at TREC. For more information on this project, you can follow the series on [YouTube](#).

Next, thanks to the Florida legislature’s and Department of Agriculture’s strong interest in hemp, there is enough funding for scientists across the State to continue researching the viability and sustainability of hemp cultivation and its ecological and economic impacts. This is good news because the hemp industry in south Florida faces some serious challenges if it is to be successful. Here at UF/IFAS TREC, for example, we have encountered both botrytis and southern blight on plants. These pathogens can be detrimental to flower production and fiber production, respectively. Additionally, we have had to quarantine for hemp russet mite which arrived with the movement of seedlings. This brings up a larger point of where growers are accessing the germplasms with which they initiate production. These challenges are serious to the hemp industry because at this time there are limited pesticide options for hemp production. The news isn’t all bad, though. Dr. Brym’s lab has seen that hemp performs best with moderate nitrogen application, split across multiple applications, and they’re conducting a study to look at fertility management calibration using drone-based aerial imaging.

Finally, the voice of the hemp industry is important for the Extension efforts at UF/IFAS Hemp. Various partners and collaborators offer their views on hemp in Florida, on Dr. Brym’s hemp blog: [Perspectives from the Hemp Industry](#). From botanists to physicians, these stakeholders share their experiences in the nascent hemp industry thus far.



## Faculty & Staff Awards

Dr. Yuncong Li was elected as a Fellow of the American Association for the Advancement of Science (AAAS).

Dr. Daniel Carrillo received the Distinguished Achievement Award in Horticultural Entomology from the Entomological Society of America—South Eastern Branch.

Dr. Ashley Smyth was awarded the 2022 Outstanding Specialist for the Florida Association of Natural Resource and Extension Professionals (FANREP). FANREP is a state association of Extension Professional Associations of Florida whose membership consists of professionals working in environmental education, fisheries, forestry, wood sciences, range, recreation, waste management, water, wildlife, energy and related disciplines. To learn more about FANREP, click [here](#).

Dr. Shouan Zhang was selected to participate in Cohort 14 of the Leadership Enhancement and Administrative Development (LEAD IFAS) program! The Program Director stated that Dr. Zhang was selected to participate because of his performance and continuing potential to influence others in ways that extend beyond himself to create lasting positive impacts in IFAS.

## UF's Core Value Connection



### STEWARDSHIP

*Show respect for those who came before us, responsibility for those now with us, and the commitment to leave a just and habitable world for those who come after us.*

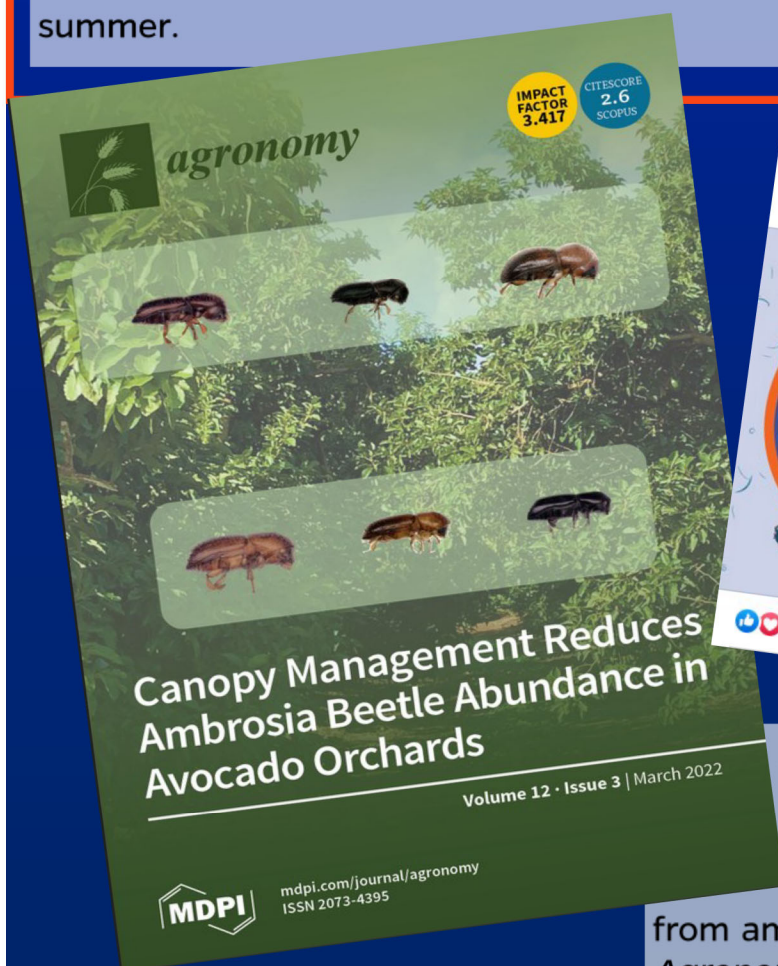
While the Center Director's message highlights many of the University of Florida's Core Values, the main message is that of **stewardship**. In hosting interns from neighboring institutions, UF/IFAS TREC researchers do more than just collaborate. We work to ensure that future generations have the opportunity to work alongside our scientists and solve real world challenges.



## Student Awards

### Congratulations to

Ketsira Pierre, an M.S. student in Dr. Shouan Zhang's lab, was selected as one of the recipients of the 2022 Food Systems Institute (FSI) Graduate Assistantship Awards. As a recipient of the award, Ketsira may receive up to \$20,968 per year over the next 3 years! Ketsira will be starting her Ph.D., with Dr. Zhang as her advisor, this summer.



<< ICYMI Octavio A. Menocal's recent publication, "Canopy management reduces ambrosia beetle abundance in avocado orchards", was selected from among 211 articles as the cover story of *Agronomy Journal*, volume 12, Issue 3. You can read Octavio's research [here](#).



Joris Van Zeghbroeck for completing his Master of Science degree under the supervision of Dr. Yuncong Li.

## Congratulations to

Octavio Menocal and Yi Huang for completing their Doctoral degrees under the supervision of Drs. Daniel Carrillo and Shouan Zhang, respectively.



# TREC IN FOCUS

## Advisory Board

Robert Fishman is a native of South Florida. He is a Partner at ThinkLAB Ventures, LLC where he helps manage a diversified set of investments for Leonard Abess and his family. ThinkLAB's portfolio includes approximately 1,800 acres of farmland in Homestead and Unincorporated Miami-Dade County, a long-term leasehold at the Opa Locka

Regional Airport, and a large portfolio of stocks, bonds, real estate, and other investment holdings. He also supports the operations of Jersey Jack Pinball, a pinball manufacturing and design company.

Robert began his business career on Wall Street at JP Morgan Chase after receiving his BA at the University of Pennsylvania. He left the firm to pursue an Executive MBA at the University of Miami, which he completed in 2011.



Robert Fishman



Yi Huang is a Ph.D. student in the lab of Dr. Shouan Zhang, Professor of Vegetable Plant Pathology. In fulfilling the mission of IFAS, her research aims to find disease management strategies for some of Florida's most important economic crops: squash and snap bean.

## Graduate Student

In 2019, Florida ranked first in snap bean production with Miami-Dade County leading the state's efforts. In the same year, Florida ranked third in squash production with the majority of those crops also being

raised in Miami-Dade County.

The primary diseases affecting Florida's snap bean and squash are halo blight and powdery mildew, respectively. Yi's research focused on the inclusion of  $\beta$ -nicotinamide adenine dinucleotide, or NAD, as an alternative way manage halo blight and powdery mildew. To learn more about her results, watch [this video](#) on our YouTube channel, TRECTV.



You can find this and other graduate student videos on our YouTube channel.



## FIND US ON SOCIAL!

ICYMI — These are just some of the highlights from a very busy Spring semester at UF/IFAS TREC. To stay up to date on all of TREC's news and events, follow us on all platforms at UFTropical or check the page on our [website](#).

**TREC**  
TROPICAL RESEARCH AND EDUCATION CENTER

**UF IFAS Tropical Research and Education Ce...** @UFTropi... · May 3 ...  
With the support of FNGLA @FNGLAMiamiDade and Dade AgriCouncil, it was our pleasure to host Commissioner Kionne McGhee, District 9 for his recognition of Mick Gnaegy and the agricultural industry in #SouthDade.

**Mamey sapote**

**uftropical**  
Original Audio  
uftropical It's #TropicalFruitTuesday!  
Learn how to grow #Mamey sapote in the Florida landscape.  
Click the link in our story!  
#RedlandRaised #Agriculture  
5w  
yomi.steph I would love to grow Mamey in my home so that I can prepare Mamey batidos all the time 🍌  
5w 1 like Reply

**UF IFAS Trec is with Mustafa Ojonuba Jibrin.**  
May 4 · 🌐  
It's #NOJD2022!  
At #IFASTREC we are #AllinforCitrus. We celebrate this day with a glass of our favorite orange juice.

**UF IFAS Tropical Research and Education Center**  
@UFTropical  
It's Day 1 of the Tamiami International #Orchid Festival!  
Come find us at the 118 booth. 💙💛  
Soundtrack: Manuel Gastelbondo  
@motesorchids #OurCounty #Ornamental

**UF IFAS**  
Tropical Research & Education Center

Kathleen Anne, Adeleye Victoria and 31 others

If this newsletter was forwarded to you, you can subscribe [here](#).





# *Save the Date*

for the Tropical Research & Education Center's

**8<sup>th</sup> ANNUAL**

## *One Night in the Tropics*

**NOVEMBER 5, 2022**



Inside TREC is a seasonal newsletter distributed by the Marketing & Communications Department of UF/IFAS TREC via e-mail and on the UF/IFAS TREC [website](#).

If you have any suggestions or would like to submit your own recognition or short article of interest, please send them to Monique Scoggin, [mis6664@ufl.edu](mailto:mis6664@ufl.edu).

You may forward any questions or comments about this periodical to Monique Scoggin, [mis6664@ufl.edu](mailto:mis6664@ufl.edu).