

INSIDE TREC



Spring 2024

In this issue:

Director's Message	1
UF President Sasse's Visit	2
Research Report:	
Dr. Alexandra Revynthi	3
Student Awards	4
Faculty & Staff Awards	5
TREC In Focus	
Graduate Student:	
Manuel Gastelbondo	6
Post Doc: Dr. Pamela Dutra	6
Advisory Board: Peter Schnebly ...	7
TREC Lab Updates	8
One Night in the Tropics	9
Upcoming Extension Events	10
EDIS Publications	10
Research Publications	11
Let's get Tropical!	12

Inside TREC is a quarterly newsletter distributed by the Communications & Marketing Development Unit of the UF/IFAS TREC via e-mail and can be found on the UF/IFAS TREC [website](#).

You may forward any questions or comments about this periodical to Monique Scoggin, mis6664@ufl.edu.

From the Desk of the Director

It's been a busy year for us so far, but one that is shaping up quite nicely. Among other things, we have just completed the interview process, screening more than 60 candidates for two positions. With that said, we are excited to announce the addition of two new faculty members who will be joining our team in August, bringing our total faculty count to 18. These experts will contribute their unique perspectives and expertise to help us to better serve the local community and beyond.



Dr. Jugpreet Singh will lead the tropical fruit crop breeding and genetics program. He received his Master's in vegetable breeding from Punjab Agricultural University, Punjab, India, and Ph.D. in horticultural sciences with a minor in plant molecular and cellular biology from the University of Florida. His research interests focus on plant breeding and genetics, particularly in applying molecular genetics, genomics, and bioinformatics for trait characterization and improvement. Toward these goals, he has worked on projects to identify genomic regions and genes associated with complex traits, including fruit quality, disease resistance, heat stress tolerance, root system architecture, and seed nutritional composition in different crops.

continued on page 2

From the Desk of the Director (continued)

He has published 30 manuscripts in leading peer-reviewed journals, provisional patents and book chapters, and has presented his research in several national and international conferences. He has further applied his knowledge to teach workshops in genomics/bioinformatics and a course in vegetable

Dr. Malek Hammami joins us as an Agricultural Economist. Dr. Hammami earned his Ph.D. in Agricultural Economics from the University of Nebraska. He currently serves as a Postdoctoral Research Associate at the UF/IFAS Gulf Coast Research and Education Center. His research interests include agricultural trade policy, industrial organization, and food market economics. He actively addresses pressing economic challenges facing Florida's fruit and vegetable industries, focusing on trade dynamics, labor issues, and the impact of various shocks, including policies and pathogens. In addition, Dr. Hammami will assist with identifying market opportunities and helping local growers adopt new tropical fruit and vegetable crops, such as finger lime, purple passion fruit, dragon fruit, vanilla, tropical pumpkin, seed oil pumpkin, coffee, and Asian vegetables, to name a few.



Drs. Jugpreet Singh
and Malek Hammami
will join us in Fall 2024!



With a full slate of talented researchers, UF/IFAS TREC is poised to make groundbreaking discoveries that will shape the future of agriculture and beyond, advancing us from our current position of strength to achieving an even greater level of local, national, and international prominence. We would like to express our gratitude for the support that we received from the offices of the UF Research Dean, UF/IFAS Senior Vice President, Florida Agricultural Experimental Station, Horticultural

Edward 'Gilly' A. Evans

President Sasse Visits Homestead



The University of Florida's 13th President, Ben Sasse, visited [Atlantic Sapphire](#), the largest global inland aquaculture farm sustainably raising salmon. The local facility has nearly 200 employees and plans to grow 220,000 annual tons of salmon by 2031.

President Sasse was accompanied by his wife, Melissa, and son, Breck. Joining the President on his first trip to the fish farm were interim SVP of UF/IFAS Rob Gilbert, Director of Florida Sea Grant Sherry Larking, TREC Center Director, Dr. Gilly Evans, Director of the UF/IFAS Tropical Aquaculture Laboratory Matthew DiMaggio, and Director of the School of Forest, Fisheries, & Geomatics Sciences Red Baker.

Research Report

In this installment of TREC's Research Report, you'll learn about Dr. Alexandra Revynthi and the research her lab is conducting to develop Integrated Pest Management (IPM) programs to control pests of the ornamental industry in south Florida.

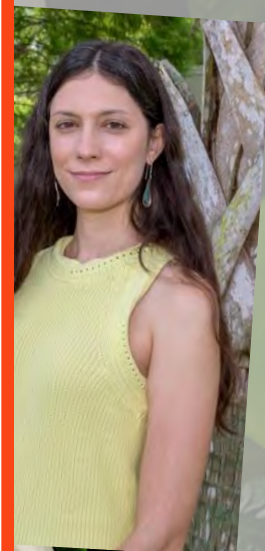
Dr. Alexandra Revynthi has been part of the TREC faculty since 2021. Even before that, she was working as a Scientist managing the Ornamental Entomology Laboratory. In the short time that Dr. Revynthi has been managing the lab, no fewer than three invasive species have interrupted the Ornamental industry in south Florida: the Hibiscus bud weevil, the horntail snail, and *Thrips parvispinus*.

The first invasive pest Dr. Revynthi was tasked to research was the Hibiscus bud weevil (HBW). The HBW feeds and oviposits in the flower buds of the Hibiscus plant thus decreasing the marketability of the crop. The HBW is a regulated pest by FDACS-DPI. You can learn more about the HBW by reviewing Dr. Revynthi's [page about it](#).

Another invasive pest that threatened the ornamental industry was the horntail snail. The horntail snail remains of quarantine importance and is a regulated pest by FDACS-DPI. For more information on this pest, visit Dr. Revynthi's [Horntail Snail Resource page](#).

Finally, *Thrips parvispinus* is an invasive and polyphagous pest causing significant damage to vegetable, ornamental, and fruit crops throughout the state, but especially in south Florida. This pest has caused significant damage to gardenia and mandevilla production in south Florida and is a regulated pest by the Florida Department of Agriculture and Consumer Services, Division of Plant Industry (FDACS-DPI). For the most up-to-date information from Dr. Revynthi's lab on this pest, review the [Thrips parvispinus page](#).

Because of the influx of invasive pests to south Florida, Dr. Revynthi has had to be resourceful to get adequate funding for her lab. Dr. Revynthi was awarded \$50,000 from the UF/IFAS Archer Early Career Seed Grants to research "Acaricide resistance on ornamentals: characterization and management". In just two years, Dr. Revynthi has brought in over \$1.5M in grant dollars to TREC. Dr. Revynthi's contributions to the industry have not gone unnoticed. She was recently awarded FNGLA's **Friend of the Industry Award**. Tal Coley, the Chief Executive Officer of FNGLA notes that Dr. Revynthi is a model for others in academia to follow. For more information on this recognition, [click here](#).



Congratulations

Student Awards

Jesse Potts, a Ph.D. student in **Dr. Xingbo Wu's** Ornamental Breeding, Genetics, Genomics and Bioinformatics lab, received another lucrative financial award/scholarships to participate in the next Bayer's "Bring Them In" event scheduled for Chesterfield, Missouri. The scholarship carries a monetary value of \$1,500. This event provides a unique opportunity that will allow Jesse a great opportunity to expand his network, learn about cool innovations as well as explore opportunities within the industry as well as challenges of adjusting to industry life post academia. Jesse was one of only a handful chosen from the nation's top universities.

Dr. Wu's lab has yet another Ph.D. student to recognize. **Sisi Chen** blew away the competition winning two awards at the recent 137 Florida State Horticultural Society's (FSHS) annual meeting. Specifically, she placed first in the Student Oral Presentation and Student Poster Presentation. Each award carries a monetary value of \$250!

Victoria Adeleye, a Ph.D. candidate in **Dr. Dakshina Seal's** Vegetable Entomology lab, was awarded first place in the Student Best Written Paper Competition at FSHS' annual meeting. **Victoria's** paper was titled "Management of Pepper Weevil, *Anthonomus eugenii* Cano (Coleoptera: Curculionidae) using chemical and cultural control methods in south Florida". You can learn more about Victoria's research [here](#).

Prerna Sabharwal, a Ph.D. student in **Dr. Geoffrey Meru's** Vegetable Breeding, Genetics and Genomics lab, won an IFAS travel grant valued at \$250 to assist with her travel expenses to attend the upcoming American Society of Horticultural Sciences Conference being held in Honolulu, Hawaii on September 23—27, 2024. **Prerna** also received a travel award valued at \$180 to attend the recent FSHS.

Ketsira Pierre, a Ph.D. student in **Dr. Shouan Zhang's** Vegetable Pathology lab, received the Bridge Scholars travel award from the Agronomic Science Foundation and the American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America. The benefits of this award include: fully funded registration and abstract fee to the 2024 ASA-CSSA-SSSA Annual meeting in San Antonio, Texas from November 10—13, 2024; one-year membership to ASA-CSSA-SSSA; Financial aid for travel to the Annual Meeting, consisting of paid lodging and a \$600 travel scholarship; and 1:1 mentorship with esteemed scientists from a range of career disciplines.



Faculty & Staff Awards

Dr. Jonathan Crane, the Associate Center Director, Professor, and Tropical Fruit Specialist received two awards at the 137 Florida State Horticultural Society's annual meeting. Dr. Crane was honored to be named the **2024 Honorary Member Award** of the Florida State Horticultural Society (FSHS). The FSHS recognizes members who have "rendered a special meritorious service to the Society and to the advancement of horticulture in Florida" with its designation of Honorary Member—this is one of the greatest honors the Society can bestow and awards the recipient lifetime membership in the Society without requirement to pay dues.



Additionally, Dr. Crane won the **Presidential Gold Medal for the third time (!)** for published works in the Florida State proceedings. The Presidential Gold Medal Award is awarded to an individual who has contributed the most to Florida horticulture through works published in the proceedings over the preceding six-year period. Each of Dr. Crane's awards has been in the category of Krome Memorial Institute which represents the areas of tropical and subtropical fruits.

Dr. Alexandra Revynthi, as Assistant Professor in the Entomology & Nematology Department, will be recognized at the FNGLA 2024 Annual Convention at the Naples Grande Beach Resort with the prestigious **Friend of the Industry Award**. This award is given to an individual from outside the association who has contributed to the advancement or improvement of the nursery and landscape industry. Dr. Revynthi is being recognized for her vital work on addressing *Thrips parvispinus* which has been critical for the industry, providing growers, entomologists and landscape companies with promising products that can be used to battle this pest as well as her past efforts on combating the hibiscus bud weevil. Mr. Tal Coley, Chief Executive Office of FNGLA noted that the consistent collaboration and availability that she has given to those in our industry through webinars, meetings, and workshops is a model for others in academia in Florida to follow.



TREC IN FOCUS

Graduate Student

Manuel Gastelbondo is a PhD candidate in Dr. Xingbo Wu's Ornamental breeding, genetics, genomics, and bioinformatics lab. Dr. Wu's lab focuses on breeding new cultivars that will have elite traits to meet industry needs as well as fit into the sustainable agriculture system that imposes minimum impact to the environment.

Manuel is a Colombian plant breeder with over 11 years of experience

in managing breeding teams and R&D programs. Currently, his research focuses on developing innovative breeding tools to enhance vanillin content in vanilla orchids, aiming to lay the foundation for a nascent vanilla production industry in the US. [Watch this video to learn more about Manuel's research and](#)

[how to pollinate vanilla.](#)



You can find this and other videos on our YouTube channel: UFTropical!



PostDoc Exposé(d)

In this edition of TREC's PostDoc Exposé(d), we feature Dr. Pamela Dutra, a post doctoral researcher in Dr. Shouan Zhang's Vegetable Plant Pathology lab.

Q: Where did you complete your Bachelor's, Master's, PhD? How did you arrive at TREC?

A: I acquired my bachelor's and master's degrees from the Federal University of Parana in Curitiba, Brazil. After that, I pursued my PhD at the University of São Paulo in Piracicaba, Brazil. When I finished my PhD research, I applied for this current position at TREC. My background and abilities were a good fit for the role, so I was selected by Dr. Zhang to join his team as a postdoctoral researcher in the vegetable plant pathology laboratory at TREC.

Q: Who has had the greatest influence on your career?

A: My career trajectory was profoundly influenced by my first plant pathology professor, Louise May De Mio. It was during my college years that I first encountered the realm of plant pathology through her classes. This initial experience ignited my passion, eventually motivating me to pursue a master's and PhD in plant pathology.

TREC EXTENDED

Advisory Board

Peter Schnebly is the owner of Schnebly Winery and Miami Brewery. Mr. Schnebly has been living and working in South Florida for over 37 years. He is dedicated to improving South Florida and especially the Redland Agricultural Area. Mr. Schnebly set a goal to start an agro-tourism business based on his farms in the Redland of South Florida.



Sustainable farming became a top priority as Schnebly wines are made from only the finest fruit. Each mango, lychee, guava, passion fruit, and carambola is personally picked for fermentation. In 2011, Mr. Schnebly dove into craft beers and in 2014 he created the Red-Lander Restaurant, kick-starting the culinary farm to table movement in the Redland and South Dade. The Schnebly name is now synonymous with all three brands. The vision of creating an agro-tourism destination has almost been fully realized.

Q: What is something unique to your role or your teaching/research/extension project here that you have not encountered before?

A: One aspect of my role that I find particularly unique is the level of flexibility afforded to me within my project. This flexibility allows me to conduct experiments across various environments, including field, greenhouse, and laboratory, providing me with a dynamic and multifaceted approach to my research. Addition-



ally, I am deeply appreciative of the robust extension activities offered by TREC, which enable me to engage directly with growers. This direct interaction allows me to gain valuable insights into real-world challenges beyond the scope of traditional research, fostering a closer connection to the practical issues faced by growers.

Q: What is the hardest aspect of your position?

A: Although I really like field experiments, the most difficult aspect of my research with a tropical crop (dragon fruit) is extensive fieldwork throughout the growing season, which occurs in the summer months. Collecting data at high temperatures can sometimes be challenging and exhausting.

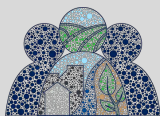


Lab Updates



Tropical Insights is the newest media to come from the UF/IFAS Tropical Research & Education Center. This podcast was initiated by Dr. German Vargas, a post-doctoral researcher in Dr. Alexandra Revynthi's Ornamental Entomology Lab.

The goal of this podcast is to discuss issues affecting the agricultural community of south Florida with the experts who may know how to solve them. The recently published Introduction is [now available on our YouTube channel.](#)



Catalina Obando, a recent graduate of the UF/IFAS Master Gardener program recently joined Dr. Zachary Brym's Agroecology Lab. You can learn more about Catalina's journey as an agroecologist by following her blog. Her latest entry, *Laying Foundations for Agroecology*, was just published. [Click here to learn more about her work in agriculture and sustainable living.](#)

The UF/IFAS Extension Miami-Dade County Florida Master Gardener Volunteer Program is accepting applications for their next cohort which is scheduled to begin in August. We encourage you to review their [website here.](#)

In Miami-Dade County, the program is hosted by the Miami-Dade Urban Horticulture team. You can learn about additional programs organized by the team [here.](#)



Catalina Obando

Industrial designer, farmer, and master gardener who is passionate about agroecology. She works at TREC (Tropical Research and Education Center) and shares her experiences through workshops, social media, and blog posts. With a firm belief in sustainable and ethical farming practices, Catalina aims to educate and inspire others to follow agroecology principles. Join her journey and learn all about her fascinating work in agriculture and sustainable living.



Dr. Pauline O. Lawrence Student Residence



Nearly two years ago, on November 5, 2022, the UF/IFAS Tropical Research & Education Center hosted several University of Florida leaders for the [Groundbreaking of the Pauline O. Lawrence Student Residence](#).

In that time, the foundation has been laid, the walls have gone up, and the exterior of the building is nearly complete.

We hope you'll join us on November 2, 2024 as we raise funds for the final stretch of this future student residence: the furniture and appliances. For more information on this year's event, [click here](#). We hope to see you in our tropical oasis!

Upcoming (Extension) Events



EDIS Publications

Dong, Y., Hulcr, J., Carrillo, D., Martini, X. (2024). The redbay ambrosia beetle and laurel wilt: FOR404/FR475, 05/2024. DOI: <https://doi.org/10.32473/edis-fr475-2024>

Gazis, R., Crane, J., & Wasielewski, J. (2024). Florida plant disease management guide: Guava (*Psidium guajava*): PP232, 05/2024. DOI: <https://doi.org/10.32473/edis-PG133-2024>

Martin, C. G. & Brym, Z. (2024). *Cannabis sativa* plant identification and its look-alikes: AGR48, 04/2024. DOI: <https://doi.org/10.32473/edis-AG476-2024>

Moon, P., Li, Y., Meru, G., Vendrame, W., Molnar, T., Wu, X. (2024). Indigo from *Indigofera* spp.: Historical and cultural overview: ENH1378/EP642, 3/2024. DOI: <https://doi.org/10.32473/edis-EP642-2024>

Nwosu, N. J., Singh, H., Brym, Z., Sharma, L., Carter, E., Revynthi, A. R., Osborne, L. (2024). Fire ants management in industrial hemp: SS-AGR-481. DOI: <https://doi.org/10.32473/edis-AG477-2024>

Sanchez, F., Crane, J. H., Bayabil, H. K., Sarkhosh, A., Shahid, M. A., & Schaffer, B. (2024). Achachairu (*Garcinia Humilis*) fruit trees: Botany and commercial cultivation in south Florida: HS1480, 3/2024. DOI: <https://doi.org/10.32473/edis-HS1480-2024>

Smyth, A. R., Laughinghouse, H. D., Reynolds, L. K., Camp, E. V., & Havens, K. (2024). Climate change: Effects on salinity in Florida's estuaries and responses of oysters, seagrass, and other animal and plant life: SGEF218, 04/2024. DOI: <https://doi.org/10.32473/edis-sg138-2024>

Smyth, A. R., Reynolds, L. K., Barry, S. C., Stephens, N. C., Patterson, J. T., & Camp, E. V. (2024). Living Shoreline Ecosystem Service Valuation Tool: SL516/SS729, 5/2024. DOI: <https://doi.org/10.32473/edis-ss729-2024>

Research Publications

- Ataide, L. M. S., Greene, A. D., Cloonan, K. R., Gill, M. A., Vargas, G., Tabanca, N., Reyes-Arauz, I., Velazquez-Hernandez, Y., Revynthi, A. R. (2024). Exploring market-available pheromone lures and traps for monitoring *Anthonomus testaceosquamosus* (Coleoptera: Curculionidae). *Journal of Economic Entomology*, 2024, toae105. DOI: <https://doi.org/10.1093/jee/toae105>
- Busuulwa, A., Revynthi, A. R., Liburd, o. E., Lahiri, S. (2024). Residual effect of commonly used fungicides in strawberries on *Amblyseius swirskii*, *Neoseiulus cucumeris*, and *Neoseiulus californicus* (Mesostigmata: Phytoseiidae). *Experimental and Applied Acarology*, 93(1). DOI: <https://doi.org/10.1007/s10493-024-00928-1>
- Belizaire, C. M., Ganan-Betancur, L., & Gazis, R. (2024). Avocado scab caused by *Elsinoe perseae*: A diagnostic guide. *Plant Health Progress*. DOI: <https://doi.org/10.1094/PHP-10-23-0084-DG>
- French, E., Smyth, A. R., Reynolds, L., & Moore, K. A. (2024). Nitrogen cycling in Widgeongrass and Eelgrass beds in the lower Chesapeake Bay. *Nitrogen*, 5(2): 315-328. DOI: <http://dx.doi.org/10.3390/nitrogen5020021>
- Hailegnaw, N. S., Bayabil, H. K., Li, Y. C., & Gao, B. (2024). Seawater flooding of calcareous soils: Implications for trace and alkaline metals mobility. *Science of The Total Environment*, 927(2024). DOI: <https://doi.org/10.1016/j.scitotenv.2024.172210>
- Gañan-Betancur, L., Crane, J. H., Schaffer, B., Vargas, A. I., Sarkhosh, A. & Gazis, R. (2024). Essential oils for managing anthracnose in mango (*Manifera indica*): Laboratory results do not translate into field efficacy. *Plant Disease*, 108(4). DOI: <https://doi.org/10.1094/PDIS-01-24-0267-RE>
- Goeckner, A. H., Smyth, A. R., Holgerson, M. A., Reisinger, A. J. (2024). Subtropical stormwater ponds are more frequently net nitrogen fixing compared to natural ponds. *Biogeochemistry*, 167(5). DOI: <https://doi.org/10.1007/s10533-024-01153-z>
- Li, X., Liu, K., Rideout, S., Rosso, L., Zhang, B., Welbaum, G. E. (2024). Seed physiological traits and environmental factors influence seedling establishment of vegetable soybean (*Glycine max* L.). *Frontiers in Plant Science*, 15(2024). DOI: <https://doi.org/10.3389/fpls.2024.1344895>
- Ojo, I., Ampatzidis, Y., de Oliveira Costa Neto, A., Bayabil, H. K., Schueller, J. K., & Batuman, O. (2024). The development and evolution of trunk injection mechanisms—A review. *Biosystems Engineering*, 240(2024), 123-141. DOI: <https://doi.org/10.1016/j.biosystemseng.2024.03.002>
- Tobar, S., Gil, P. M., Schaffer, B., Schwember, A. R., Cautin, R., & Martiz, J. (2024). Physiological and growth responses of W. Murcott Tangor grafted on four rootstocks under water restriction. *Horticulturae*, 10(4): 352. DOI: <https://doi.org/10.3390/horticulturae10040352>
- Vought, K., Bayabil, H. K., Pompeo, J., Crawford, D., Zhang, Y., Correll, M., Martin-Ryals, A. (2024). Dynamics of micro and macronutrients in a hydroponic nutrient film technique system under lettuce cultivation. *Heliyon*, 10(11), e32316. DOI: <https://doi.org/10.1016/j.heliyon.2024.e32316>
- Williams, S. L., Fischman, H. S., Angelini, C., Smyth, A. (2024). Density-dependent influence of ribbed mussels on salt marsh nitrogen pools and processes. *Journal of Ecology*, 00, 1-14. DOI: <https://doi.org/10.1111/1365-2745.14342>
- Wu, X., Michael, V. N., Lopez-Hernandez, F., Cortes, A. J., Morris, J. B., Wang, M., Tallury, S., Miller III, M. C., & Blair, M. W. (2024). Genetic diversity and genome-wide association in cowpeas (*Vigna unguiculata* L. Walp). *Agronomy*, 14(5). DOI: <https://doi.org/10.3390/agronomy14050961>

LET'S GET TROPICAL!

ICYMI — These are just some of the highlights from the beginning of the 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 bookmark the *TREC in the News* page on our [website](#).

