



Inside TREC



From our Director:

I am pleased to launch *Inside TREC*, our new quarterly e-newsletter. The main purpose of this e-newsletter is to provide a valuable source of information and insights into what we have been researching, thinking, teaching, and doing to improve the sustainability of our agricultural industries, preserve our environment, and better manage our natural resources. It represents yet another way we are strengthening our efforts to become engaged with our communities and increase the impact of our programs. In addition, the e-newsletter provides us the opportunity to share information about upcoming events; important news; and the accomplishments of our faculty, students, and staff.

In developing this e-newsletter, one of the goals was to make navigating and reading the information easier and more enjoyable. As such, we are providing lots of headlines and short summaries while providing you, the reader, with the ability to link to more in-depth articles. I trust that *Inside TREC* will become a welcome addition to your inbox.

Latest Publications from our Faculty:

Peer-reviewed publications:

- **Bassil E**, Zhang S, Gong H, Tajima H, Blumwald E (2019) Cation Specificity of Vacuolar NHX-Type Cation/H⁺ Antiporters. *Plant Physiology* 179: [616-629](#). [Link](#)
- Ying H, Resende MRF, Bombarely A, Brym M, **Bassil E** and **Chambers A** (2019). Genomics-based diversity analysis of *Vanilla* species using a *Vanilla planifolia* draft genome and Genotyping-By-Sequencing. *Scientific Reports*. [Link](#)
- Shin, S., **Y. Her**, J. Song, and M. Kang, (2019). Integrated sediment transport process modeling by coupling Soil and Water Assessment Tool and Environmental Fluid Dynamics Code: A case study of an agricultural reservoir, *Environmental Modeling, and Software*, 116, 26-39. [Link](#)
- Choi, D.(g), H. Park(g), Y. J. Kim(g), J. Jung(g), W. Choi, **Y. Her**, and K. Yoon, (2019). Curve numbers for rice paddies with different water

management practices in Korea. *Journal of Irrigation and Drainage Engineering*, 145(5). [Link](#)

- **Her, Y.**, K. T. Morgan, and Q. Wang, (2019). An Excel-based computational template for irrigation scheduling using dual crop coefficients. *Journal of Extension* 57(1), 1TOT2. [Link](#)
- Jeong, J., K. Wagner, J. J. Flores, T. Cawthon, **Y. Her**, J. Osorio, and H. Yen, (2019). Linking watershed modeling and bacterial source tracking to better assess E. coli sources. *Science of the Total Environment* 648, [164-175](#). [Link](#)
- **Her, Y.**, and C. Heatwole, (2018). Identification of hydrologically sensitive areas considering watershed process dynamics. *Transactions of ASABE* 61(6), [1891-1906](#). [Link](#)
- Njung'e Vincent Michael, Pamela Moon, Yuqing Fu, and **Geoffrey Meru**. 2019. Genetic diversity among accessions of Cucurbita pepo resistant to Phytophthora crown rot. *HortScience* 54(1):17–22. 2019. [Link](#)
- Mohammad A. Razzak, **Dakshina R. Seal**, Philip Stansly, Oscar Liburd and Bruce Schaffer. Host preference and plastic mulches for managing melon thrips (Thysanoptera: Thripidae) on field-grown vegetable crops. *Environmental Entomology* 09 March 2019. [Link](#)
- **Smyth, A.R.**, T. D. Loecke, T. Franz, A.J. Burgin. 2019. Using high-frequency soil oxygen sensors to predict greenhouse gas emissions from wetlands. *Soil Biology and Biochemistry* (128): [182-192](#). [Link](#)
- Liu, Q., **S. Zhang**, Y. Huang g, and J. Jones. 2019. Evaluation of a small molecule compound 3-indolylacetonitrile for control of bacterial spot on tomato. *Crop Protection* 120: 7-12. [Link](#)

Book Chapters:

- Vendrame, W. 2018. Cryopreservation. In: *Orchid propagation: From Laboratories to Greenhouses*. Chapter 15-1 (pp. [283-302](#)). Yeung, E.C.T. and Lee, Y-I. (eds.), Springer Protocols Handbooks, Humana Press, Switzerland. 524 pp. [Link](#)

Other Publications:

Edis publications:

- Geoffrey Meru and Yuqing Fu, "[Yield and Horticultural Performance of Naked-Seed Pumpkin in South Florida](#)"

- Fredy H. Ballen, Edward A. Evans, Aditya Singh, and Jonathan H. Crane, "[Sample Profitability and Cost Estimates of Producing Longan \(*Dimocarpus longan* Lour.\) in South Florida](#)"
- Alan H. Chambers, "[Alpine Strawberry as a Potential Niche Crop for Florida Growers and Homeowners](#)"

UF/IFAS Blog Publications:

- [UF Scientists Sequence Vanilla Genome, Could Support Domestic Industry.](#)
- [UF/IFAS Researchers Find Aromatic Strawberry Variety Grows in South Florida](#)

TREC in the News:

Drs. Chambers' and Bassil's research on vanilla:

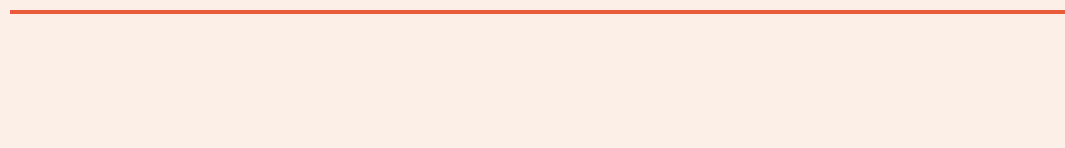
- <https://www.morningagclips.com>

Dr. Chambers' research on strawberries:

- <https://www.morningagclips.com>

Dr. Brym's research work on Industrial Hemp:

- <http://vscnews.com>
- <http://southeastagnet.com>





Teaching:

Dr. Wagner Vendrame is teaching this spring semester two online courses on orchid biology and culture:

- [ORH4280 – Orchidology \(undergraduate\)](#)
 - [ORH5282 – Orchid Biology and Culture \(graduate\)](#)
-

Successful Events:

- **TREC faculty retreat**, December 3-7th, 2018 took place in the UF Coral Gables Office
- Dr. Dakshina Seal presented "Evaluation of traps for corn silk fly (Diptera: Ulidiidae) adult population monitoring in Florida sweet corn" and "Management of fall armyworm using biorational insecticides" at the **93rd Annual Meeting of the Southeastern Branch of ESA**. March 3-6, 2019, Mobile, Alabama.
- Dr. Ashley Smyth presented her work on oyster aquaculture at the **Northeast Aquaculture Conference and Expo** on January 9-11, 2019
- Dr. Ashley Smyth was part of a panel discussing coastal resiliency at the **North Carolina Clean Technology Summit** on Feb 28, 2019.

- The [56th Annual Agricultural Farm Tour and Luncheon](#) was celebrated on February 22nd, 2019. Emeritus Professor and former TREC's Center Director Dr. Waldemar Klassen was honored.
-

Faculty and Staff Awards:

- **Dr. Wagner Vendrame** received one of the 2018 University of Florida Term Professorship Awards. These three-year professorships are given to recognize and reward faculty achievements.
 - **Dr. Daniel Carrillo** received the Entomological Society of America Southeastern Branch Award for Excellence in Integrated Pest Management at the recent 93rd annual meeting Southeastern Branch of the Entomological Society of America held in Mobile, Alabama. This award recognizes and encourages outstanding contributions to integrated pest management in North America and U.S. possessions.
 - **Drs. Elias Bassil and Alan Chambers** were among the recipients of the 2019 UF/IFAS International Travel Awards. They were selected from a competitive field consisting of 40 applicants. Dr. Bassil will be heading to Wageningen and Dr. Chambers to Madagascar.
-

Students and Alumni News:

- **Ms. Satbyeol Shin**, Dr. Her's Ph.D. Student, is the recipient of the 2018 **Everglades Foundation for Everglades Scholarship**. Her overall research project is titled "Evaluating Climate Change Impacts on Water Quantity and Quality in the Upstream Everglades System using Spatially Integrated Modeling Approach." In particular, she and her major advisor proposed to quantify water and nutrient loading to Lake Okeechobee using two different watershed models (WAM and SWAT) and assess climate change impacts on the loadings.
- At the **ABE Poster Symposium**, **Ms. Satbyeol Shin**, Dr. Her's Ph.D Student, received 2nd place award for her

research: Watershed loading model coupled with receiving waterbody model for integrated sediment transport modeling



- **56th Annual Agricultural Farm Tour and Luncheon** was celebrated on February 22nd. Several TREC graduate students were recipients of scholarships. In the picture Dr. Evans and the awardees, Rafia Khan, Sarah Brewer, Lynhe Demesyieux, Vincent Michael

Outreach and Extension Activities:

- On February 11th, the Tropical Fruit Growers of South Florida held a Tropical Fruit Growers Forum at the Miami-Dade County Extension Services, where **Dr. Jonathan Crane**, Tropical Fruit Specialist spoke about Understanding Lychee Flowering
- On February 20th **Dr. Ashley Smyth** held the Stuff and Shuck event at TREC. Participants in the Florida Master Naturalists Coastal Restoration Course prepared 1300 lbs. of oyster shell from local restaurants for living shoreline projects. This amount of shell protects 160ft of shoreline and can provide a maximum of \$4,438 of ecosystem services in 2-14 years.
- February 26th **Dr. Zachary Brym** participated in the 4th Annual Florida Agricultural Policy Outlook that took place at the GCREC in Balm. His presentation: Industrial hemp and medical marijuana: the next big crops?
- On February 27th a New Growers Workshop Series was presented at the Miami-Dade County Extension Office, where **Dr. Jonathan Crane**, Tropical Fruit Specialist, and Jeff Wasielewski, Commercial Tropical Fruit Extension Agent, spoke about Mango and Sugar Apple. Attendees of the

workshop also did a field trip visit to TREC's Mango and Sugar Apple collection.



- On March 15th Miami-Dade College InterAmerican Campus students visited TREC and met with different faculty members to learn about following a career path in science.
- On March 19th **Dr. Jonathan Crane** and Jeff Wasielewski as part of their new grower workshop series spoke about Growing Longan and Lychees in south Florida.
- **Dr. Dakshina Seal** was invited by Corteva Agriscience and Palm Beach Co. Extension to present a talk on the management of pepper weevil (attendance 30 commercial growers).
- **Dr. Daksina Seal** Cooperated with Mr. Gene McAvoy, Regional Vegetable Extension Agent by providing information on biology, management of various vegetable insect pests to publish South Florida Vegetable Pest and Disease Hotline SFLVEG-L@LISTS.IFAS.UFL.EDU.
- **Dr. Wagner Vendrame** as a STEM-MIA Scholar and collaborator to the NSF STEM-MIA project for Academically Talented STEM Student Scholarships was invited to participate in the Speed Networking Session at the Miami-Dade College InterAmerican Campus to meet students and talk about internship opportunities.

Grants Received:

- **Dr. Romina Gazis** in collaboration with **Dr. Bruce Shaffer** were funded by the USDA-Forest Service, Forest Health Protection, Special

Technology Development Program. "Fighting the Spread of Laurel Wilt by Increasing the Speed and Diagnostic Resolution of *Raffaella lauricola*".

- **Dr. Geoffrey Meru** was awarded a grant from FDACS for his proposal "Managing emerging threat by three whitefly-transmitted viruses (CuLCrV, CYSDV, and SqVYV) in commercial vegetable production".
- **Dr. Shouan Zhang** and other members of his team were awarded an NSF grant for their innovative path-breaking proposal to further develop "smart" whole-cell biosensors (WCBs). These sensors can detect nutrients essential to soil well-being, including copper, zinc, sulfate, and phosphate and can also signal the presence of harmful chemicals. Specifically, Early-Concept Grants for Exploratory Research (EAGER) grant will help the researchers meet the project's three main objectives: engineer the spores to monitor the chemical characteristics of soil; establish and monitor the soil's microbial fingerprint; and validate their use in variable, simulated field conditions.

Upcoming Events:

- Dr. Ashley Smyth will be collecting oyster shells at the **Deering Estate Seafood Fest** on March 31. Volunteer to man a bin and get free admissions to the festival.
- The **Eyes on Grasses**, a citizen science seagrass and algae monitoring program in Charlotte Harbor lead by Sea Grant Agent Betty Staugler, kicks off this April.
- [One Night in the Tropics kick-off event to recognize sponsors & UF Alumni](#) will take place in May 2nd at UF Coral Gables
- Dr. Young Gu Her will be a speaker, at **GEER 2019** meeting that will take place in Coral Springs from April 22-25 to give an oral presentation entitled "Evaluating the Performance of Climate Models for Reproducing Rainfall in Florida." Link to the meeting website: <https://conference.ifas.ufl.edu/geer2019/>.
- Dr. Her is traveling to Vietnam and South Korea in late March to attend a conference in Hanoi, meet with **APEC Climate Center** scientists, and give a seminar at **Seoul Nation University**.
- On July 16th **TREC** will host the **7th Annual South Florida Graduate Research Symposium**

- Stay tuned about our **2019 One Night in the Tropics Event** this coming October
 - This year we will be celebrating our **90th anniversary**. Information to follow
-

Next Spring Seminars:

- Apr 11: Elizabeth Kelly, PhD Student, University of Miami, "*Cyanobacteria and Enterococci in the Lake Okeechobee, St. Lucie, and Loxahatchee Watersheds*"

Apr 25: Dr. Yirgalem Assegid, South Florida Water Management District, "*Groundwater modelling and the inclusion of wetland package for the lower west coast of south Florida*"

May 2: Dr. Rafael Munoz-Carpena, UF - Agricultural & Biological Engineering, "*TBD*"

May 23: Shannon Lynch, PhD candidate, Department of Plant Pathology, University of California Davis, "*TBD: avocado research in California*"



Facebook



Twitter



Website

UF/IFAS Tropical Research and Education Center
18905 SW 280 St. Homestead, FL [33031-3314](#)

[\(305\) 246-7000](#)

*Copyright © *2019 TREC*, All rights reserved.*

