

Miami-Dade Extension Connection

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Florida Master Naturalist Program student Sarah Zollner explores a bald cypress dome in Everglades National Park. See p. 10.
Photo: Ana Zangroniz



Letter from the Editor

Ana Zangroniz, Sea Grant Extension Agent

Dear Friends of Extension,

Winter flew by, and despite the cold fronts that keep blowing in, spring is upon us. This means growing seasons begin to ramp up in activity, we start seeking shelter in the coolness of air conditioning more frequently, but best of all, for me, it's time to be on and in the water. My weekends (and on occasion, weekdays) are spent boating and scuba diving, for joy and for science. This very passion is what brought me into this job, where I get to share the knowledge about what I love almost every day.

Over the winter and into the start of spring, I've been fortunate to participate in programming opportunities that have involved collaboration with many entities, and now, for both myself and my colleagues, our Extension programming is going full force. At the start of the new year, I partnered with our former 4-H Extension Agent, Jeremy Smith, to offer Miami-Dade County's first-ever Winter Marine Science Camp (see p. 7 for the full story). In February, I was delighted to participate in "Wild Vizcaya," a naturalist-based approach to the species documentation on the property of the Museum. I ran the Mangrove Station at this event, teaching high school groups, as well as, Vizcaya visitors all about this very nifty salt-tolerant tree, and how it protects us here in southeast Florida, among other things. Also at this event, I trained volunteers to work at the Station with me, some of whom had never seen a mangrove, and by the end of the day, they were teaching visitors like pros!

One larger-scale collaboration included my participation in the National Sea Grant Office's Community Response to Flooding Visioning Workshop, held in Miami. I was particularly excited to be a part of this event, as it involved working with Sea Grant representatives from around the United States to craft what would be the guiding statement and objectives for this very important area of focus: flooding. Another larger collaboration involved me working with the National Oceanic and Atmospheric Administration's Office of Coastal Management to bring a session of "Planning and Facilitating Collaborative Meetings" to Miami-Dade County. Multiple agencies at the local, state, and federal level participated in this opportunity, strengthening their abilities to engage with the community. Last but not least, I continued a particularly important partnership with the Deering Estate in Cutler Bay, co-teaching my first ever Freshwater Systems module of the Florida Master Naturalist Program (see p. 10) along with a Deering employee.

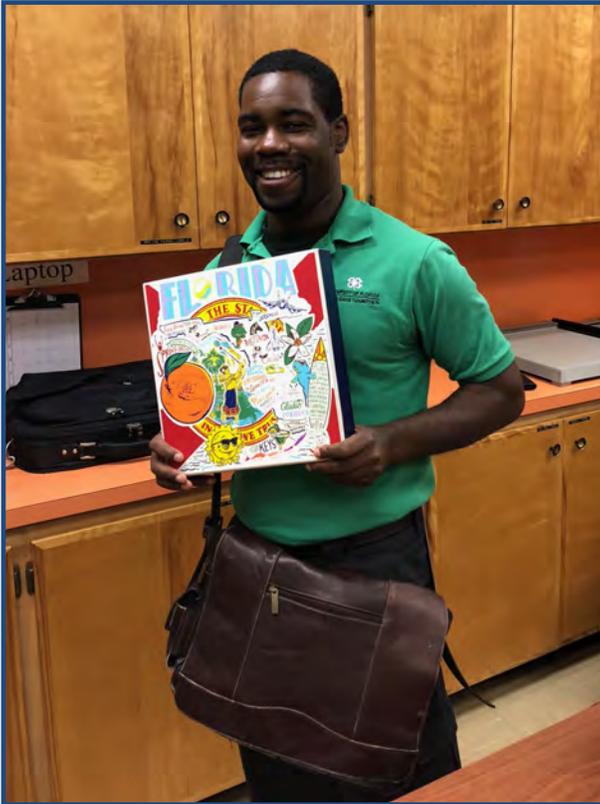
It's said that "teamwork makes the dream work." I couldn't say it better myself. I hope that you are able to create partnerships, whether personally or professionally, that assist you in achieving your goals. We here at Extension are ready to serve as one of those, whenever you need us.

Warmly,



Comings and Goings/Did You Know?

Farewell to Jeramy Smith



The Miami–Dade Extension office is in a bit of distress right now as we recently lost one of our brightest stars. Jeramy Smith left his position as a 4–H agent to move on to become the Youth and Family Director at the South Dade YMCA. In his new capacity, Jeramy will coordinate all spring and summer camping programs, as well as the youth and in government programs.

During the brief time Jeramy was a 4–H agent, he made major impacts in Miami–Dade County. Hundreds if not thousands of youth in our community were exposed to the 4–Hs of “head, heart, hands and health” because of Jeramy. His effervescent personality and always upbeat demeanor quickly made him a community favorite. We know you will continue to grow and do well Jeramy, but we will miss you. Don’t forget that 4–H always needs volunteers, so come by and see us sometime!

Jeramy Smith showing off his gift at his farewell party.
Photo: Jeff Wasielewski

Did You Know?

Did you know that our own E. Vanessa Campoverde was recently honored by UF/IFAS author Brad Buck? Brad wrote about Vanessa being an exemplary woman in agriculture and her many achievements. Vanessa is our commercial ornamental Extension agent and has worked for Extension since 2011. You can find out more about Vanessa and Brad’s article [here](#). Thanks for all you do for the ornamental industry Vanessa!



Women in Agriculture: E. Vanessa Campoverde teaches nursery staff. Photo: UF/IFAS

Tropical Research Education Center Spotlight

Trialing New Fruit Crops for South Florida

Dr. Alan Chambers, UF/IFAS, TREC



Dr. Alan Chambers inspects the growth of his Vanilla vines. Photo: Tyler Jones

I was hired in August 2016 for a new position at UF-TREC focusing on tropical fruit genetics and breeding. This was my first experience in South Florida, and many of the tropical fruits I saw were new and exciting. I was already familiar with some of the major tropical fruits like mango, avocado, and coconut, but what were caimito, longan, and mamey? I quickly learned that each species has strengths and weaknesses, yet most (if not all) could benefit from strategic plant improvement that would ultimately benefit our growers, consumers, community, and the environment. With so much work to do and limited resources, focusing on just a few species was (and continues to be) a major challenge. Several have risen to the top of the priority list since my first experiences at TREC, and many of these will be reviewed here as examples of the possibilities in southern Florida.

Strawberry

How do growers choose which variety of a fruit species to cultivate? Sometimes there is only one option available at the nursery. For others, there are hundreds of options to choose from and selecting one can leave you feeling dizzy. This is certainly the case for strawberry with many cultivar options. During our field

Tropical Research Education Center Spotlight

Trialing New Fruit Crops for South Florida

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visits, a few researchers and I found that growers were favoring a resilient, yet somewhat outdated, variety of strawberry known as 'Strawberry Festival' released in 2000. 'Strawberry Festival' is a good variety, but part of my research appointment includes trialing new varieties to see if better options exist for our area. By way of analogy, think about cell phone technology back in 2000 vs today, and consider all of the improved features and benefits that have been made over the last 18 years. This is why we are interested in modern cultivars.

The University of Florida already has a successful strawberry breeding program at the Gulf Coast Research and Education Center located outside Tampa led by Dr. Vance Whitaker. Many new varieties with improved yield and disease resistance have been released since 'Strawberry Festival'. So, my team set up a field trial over two years to look at yield, fruit quality, and disease in our South Florida environment. We learned that while 'Strawberry Festival' performed well, 'Sweet Sensation' (released in 2013) had better yield with improved disease resistance. Our full results will be available in an upcoming EDIS publication. This information can help growers make more informed decisions to increase yield, reduce inputs, and hopefully increase profitability.



Improved resistance to Anthracnose fruit rot (left) has been obtained through conventional breeding of modern strawberry cultivars (right). Photos: Dr. Alan Chambers

Vanilla

Is your crop worth \$600 per kilogram? Cured seed pods from *Vanilla planifolia* (the commercial species) are reaching high market prices due to low supply, high demand, and other factors. Is there an opportunity for Florida growers to capture some of this market? There are four Vanilla species native to South Florida. These grow for the most part in protected lands and are listed as endangered species. As a geneticist, these are genetic gold mines, but they probably aren't worth much to a grower. Still, *V. planifolia* cuttings and tissue culture plants are available for purchase through online vendors. How would an interested grower establish a vanillery? How many plants do you need? What cultural practices are optimal? What are the economics? What are the potential pitfalls and risks? These questions are similar for the cultivation of any new species. Part of my program is now investigating the potential of Vanilla for local growers as either a primary or secondary crop. Over the coming years, we will generate data to assist growers in understanding the above questions to decide if *Vanilla* cultivation is right for them.

Tropical Research Education Center Spotlight

Trialing New Fruit Crops for South Florida

continued

Mango

I couldn't wait to start working on mango! A major focus on my lab includes analyzing fruit quality for a number of species. For example, how are different mangos related to each other from an analytical chemistry perspective? Are there some that will command a premium price? Are consumers even willing to pay more for a higher quality mango? We are seeking funding to expand our current work to understand fruit quality in over 100 mango varieties.

The big picture of fruit quality should help us understand how to keep domestic growers profitable when competing against imports. While our cost of production may be higher (labor, inputs, regulatory), there might be opportunities around fruit quality that could pose a barrier to entry against international competition and thus support our domestic growers. As a consumer, I can see the value in the standard grocery store mango with its attractive peel and basic flavor. I can also see large market opportunities for a mango selling itself through its tropical aroma that you can smell in the produce section from 10 feet away, and is so sweet that you scour stores within 20 minutes of your home to deplete inventories before your neighbors do the same.

Our collaborative mango effort seeks to identify and quantify important sensory components that define superior mangos, and take that all the way back to genetics in order to create higher yielding mango cultivars with amazing flavor profiles. This is surely a long term prospect, but modern molecular and genomic tools are making traditional plant improvement more efficient than ever before. Perhaps we will be releasing designer mango cultivars in the future.

These are just three examples of the type of work we conduct at the UF-TREC Tropical Fruit Genetics and Breeding Lab. Our passion is trialing modern varieties, supporting the establishment of new crops, and bringing new opportunities to established crops to benefit our growers, consumers, community, and the environment.

Pilot 4-H Winter Marine Science Camp a Smashing Success!

Ana Zangroniz, Sea Grant Extension Agent



4-H Winter Marine Science campers observe rehabilitated sea turtles at the Miami Seaquarium. Photo: Ana Zangroniz

Earlier this year, a 4-H agent from Muscogee County, Georgia Cooperative Extension, 4-H agents in Santa Rosa, Holmes, and Miami-Dade counties, Florida, as well as the Florida Sea Grant agent in Miami-Dade County partnered to host the 2018 4-H Winter Marine Science Camp at Camp Greynolds in North Miami Beach. This camp was the first of its kind for the 4-H program here in Miami-Dade County.

The winter science camp was modeled after a successful summer Miami-Dade County 4-H marine science camp for Air Force youth, further developed with input from the Florida Sea Grant agent in Okaloosa/Walton counties, and the aforementioned agents.

During one of the coldest and wettest first weeks of January in several years, 37 intrepid individuals took up residence at Camp Greynolds for a three-night stay. All campers were between the ages of 12-18, with 13 of them residing in Miami-Dade County, and the other 17 from other parts of the state and Georgia.

Campers participated in activities that included a presentation from a Coast Guard member, constructing Sea Perch Remotely Operated Vehicles, learning about aquatic invasive species,

performing lionfish dissections, visiting the Biscayne Nature Center, and participating in a scavenger hunt at the Miami Seaquarium. An unexpected treat was the visit by Dr. Ashley Smyth, from the UF/IFAS Tropical Research and Education Center. Dr. Smyth taught the campers about local sediments, or layers of soil under water sources, and some of the campers collected sediment samples from Arch Creek under the direction of Dr. Smyth.

Former Miami-Dade County 4-H Extension Agent Jeramy Smith pioneered this effort, bringing the partners around the state and different programs together. Smith knew it was important to showcase the diversity of Miami-Dade County, and planned two special outings: an evening boat tour of Miami and a field trip into Little Havana, to eat authentic Cuban food at La Carreta, a local institution. The students also participated in group dance lessons lead by Smith and the other agents. As a result of their three-day adventure, the campers gained practical skills in the STEAM (Science, Technology, Engineering, Arts, and Math) areas, and received a well-rounded camp experience. All in all, the first winter marine science camp was a smashing success!



Dr. Ashley Smyth, right, shows 4-H camper Hunter Hoskins how to collect a sediment sample. Photo: Ana Zangroniz

Be Prepared to Grow Cover Crops Soon

Dr. Qingren Wang, Commercial Vegetable Extension Agent & Pesticide Trainer

The growing season for most winter vegetables has almost finished in Miami–Dade County. A hot and rainy summer will come soon because spring time is very short in the subtropics. Wisely managing the bare land after vegetable crop residues cleaned up has become a serious consideration for vegetable growers. Keeping land fallow during summer with as much as 40– or 50–inches of rainfall, definitely results in a substantial loss of water and nutrients through leaching, especially in the sandy or gravelly soils, such as those found in Miami–Dade County. In addition, weeds can grow with abandon, and growers have to disk the land at least 2–3 times through the long summer to kill the weeds. The total cost for labor and fuel for disking land is about \$100 per acre.

An alternative approach to conserve soil and water, and suppress field weeds is to grow summer cover crops, such as sunn hemp, sorghum sudangrass, and pearl or Japanese millet. These crops can grow fast and cover the land quickly and densely. They can also scavenge for the leftover soil nutrients applied in the previous season and accumulate them in plant tissues with large amounts of biomass, they can suppress weeds by shading them out, and they can improve soil fertility as a green manure after it is incorporated into the soil. In addition, some cover crops, especially sunn hemp, can suppress some soil pests, especially root–knot nematodes.

In recent years, seed costs are reasonably affordable. The price can change any time but based on previous years, sunn hemp seed is about \$1.50 per pound, sorghum sudangrass costs \$0.69 per pound, and Japanese millet is about \$0.75 per pound (please check the current price). With seeding rates at 25–30 lb per acre for sunn hemp or sorghum sudangrass, it costs about \$40–\$45 per acre for sunn hemp, and \$17–\$20 per acre for sorghum sudangrass. With a seeding rate of 15 lb per acre for Japanese millet, it costs only about \$11 per acre. The seed cost is obviously much lower than that of labor and fuel to disk the weedy land. Tye–drill planter with seeding rates adjustable is usually applied for cover crop planting (Figure 1), and seeding depth is about 1/4 –1/2 inch with appropriate soil moisture.



Left: Figure 1: A tye–drill planter is used for cover crop planting. Right: Figure 2: Sunn hemp in the first week after seeding. Photos. Dr. Qingren Wang

Be Prepared to Grow Cover Crops Soon

continued

Typically, these cover crops are seeded from middle of May to June, the seeds can germinate in 3–5 days (Figure 2), within a month, the land can be covered completely, and after 2 months, the plants for both sunn hemp and sorghum sudangrass (Figure 3) can reach 6 ft tall (Figure 4), which can be ratooned (or cut back) for regrowth or flail mowed (knocked down, but not completely cut) and incorporated into the soil. Sunn hemp can grow year-round but seeding too early (e.g., March or April) or too late (after August or September) can limit the biomass production because of the sunn hemp growth cycle. To avoid volunteer plants in the vegetable growing season, pearl or Japanese millet cannot be ratooned, and needs to be mowed and incorporated into the soil on time.



Above: Figure 3: Field view of sorghum sudangrass. Right: Figure 4: Sunn hemp plants densely cover the land.

Photos: Dr. Qingren Wang



Students Complete Freshwater Systems Module of the FMNP

Ana Zangroniz, Sea Grant Extension Agent



From left: FMNP students Ralph Ariza, Kristin Fonseca, and Yvette Naser practice plant identification at the Deering Estate pump station. Photo: Ana Zangroniz

This was an exciting start of the year for me as I co-lead my very first Florida Master Naturalist Program (FMNP) course. With the unwavering support from fellow instructor and colleague Karen Solms of the Deering Estate, we planned content, coordinated guest speakers, and plotted two field trips for the participants of the class.

Students came from a variety of backgrounds and educational experiences. Some took the class for personal educational advancement, others for professional development. In addition to plant, invertebrate, fish, and reptile species identification, the students learned about hydrological history of the Everglades, and current projects taking place in local freshwater systems, including but not limited to: alligators and crocodiles as climate change indicators, amphibian research, peat science in the Everglades, various conservation initiatives, and a stimulating bird identification presentation. Additionally, Deering Estate staff offered a hands-on activity in which many of the students were able to safely and respectfully handle snake species that are housed at Deering for educational purposes.

The Deering Estate hosted the course, providing an excellent facility for classroom learning but also granting front-door access to several habitats for one of the class field trips. The first field trip at Deering Estate introduced the class to herbaceous wetlands, pine rocklands, and tropical hardwood hammock habitats. While the focus of the class was freshwater systems (as opposed to uplands habitats),

Students Complete Freshwater Systems Module of the FMNP

continued

the excursion demonstrated just how inter-connected all of the habitats are, and how they work together to support the ecosystems and species that depend on them. The class was also treated to a presentation about the Deering pump station, a component of the Comprehensive Everglades Restoration Program.

Field trip #2 took the group to the quintessential Florida wetland—Everglades National Park. The students were treated to a special guest trip leader: Jeff Wasielewski, the Commercial Tropical Fruit Extension Agent for Miami-Dade County Extension, as well as

Everglades guru and narrator extraordinaire. Jeff and I planned an outing that included a slough slog (a waist-high wade through a forested wetland) in a bald cypress dome, a lunch and discussion at Long Pine Key, and an Anhinga Trail photo scavenger hunt. Throughout the day, the students participated in a mini BioBlitz activity (an event that focuses on identifying and recording as many species as possible in a given time period, and/or given area), keeping track of all species they observed in the Park.

This class received a special treat, a visit from the creator of the FMNP, Dr. Marty Main. Dr. Main graciously agreed to attend the class and give a lecture. The students engaged Dr. Main with thoughtful questions and discussion. Both students and instructors left that evening's class inspired and motivated.

The course culminated the final project presentation, a requirement to graduate from the module. Final projects served as a demonstration of the information/concepts/species learned in the course, presented in each student's unique way. Projects were as varied as educational lectures, games, sensory experiences, artistic renderings, and hands-on activities. At the end of the night, all 13 students graduated from the Freshwater Systems module, and two of those students officially became "Florida Master Naturalists," having completed all three of the Core Modules.



The FMNP students gather for a group photo with Dr. Marty Main (front row, third from the right) during their Freshwater Systems class. Photo: Esmeralda Reyes



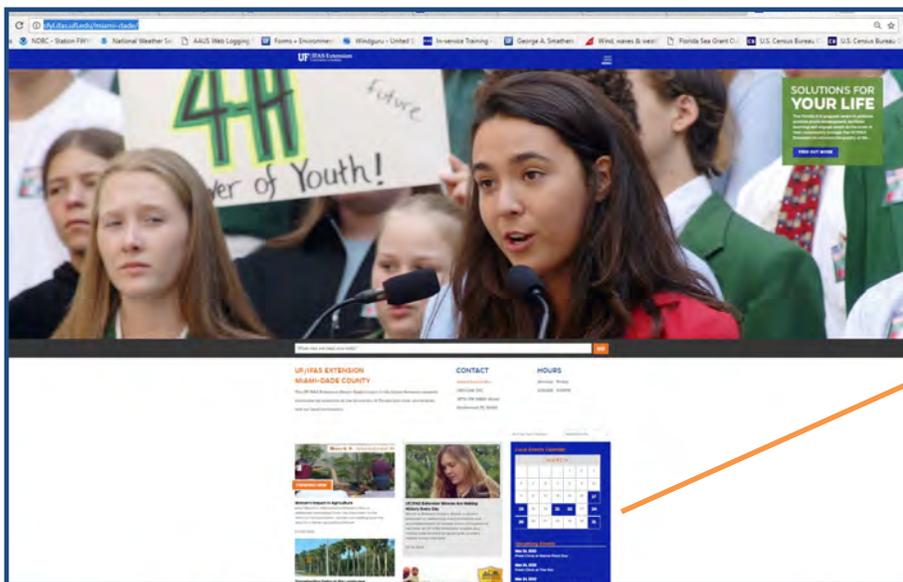
From left: FMNP students Leigh Buckner, Mario San Jorge, and Liz Jones observe a manatee in the boat basin at the Deering Estate during an FMNP field trip. Photo: Ana Zangroniz

Want to Become a Florida Master Naturalist?

The FMNP is an adult education UF/IFAS Extension program developed by the University of Florida and provided by many Extension offices and participating organizations throughout the state of Florida. The mission of the FMNP is to promote awareness, understanding, and respect of Florida's natural world among Florida's citizens and visitors. For more information, please visit the Florida Master Naturalist Program [web page](#).

What's New at Miami-Dade Extension?

Check out our new website! To access our Extension Calendar, please visit our website: <http://sfyl.ifas.ufl.edu/miami-dade/> and scroll through the calendar. There, you will find all event information including how to register for classes and workshops.



Local Events Calendar						
MARCH						
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Upcoming Events

- Mar 24, 2018
Plant Clinic at Native Plant Day
- Mar 24, 2018
Plant Clinic at The Fair
- Mar 24, 2018
Rain Barrel/Water Conservation Workshop at Native Plant Day at A.D. Barnes Park

What is UF/IFAS Extension?

The UF/IFAS Extension Service is the liaison between research conducted at the University of Florida, other institutions of higher learning, other universities and stakeholders in Miami-Dade County. Our clientele includes growers (agricultural and horticultural), homeowners, youth, people interested in family issues or food and nutrition, and marine industries.

The UF/IFAS Extension Miami-Dade County receives direct funding from the [University of Florida's Institute of Food and Agricultural Sciences \(IFAS\)](#) and [Miami-Dade County's Parks, Recreation and Open Spaces Department](#).

The United States Department of Agriculture (USDA) is the third partner in this cooperative agreement. The Miami-Dade County offices are part of a nationwide system of information, outreach, and education offered by county governments and land-grant educational institutions in each state.

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Check out our various informative videos on our YouTube channel: [UF/IFAS Extension Miami-Dade](#)



Tweet with our agents and programs on Twitter: [@sflhort](#), [@MiamiUCU](#), [@miamidade4h](#), [@evcampoverde](#)

This newsletter is edited by Jeff Wasielewski and Ana Zangroniz. If you have any questions or concerns, please contact us at jwasielewski@ufl.edu or azangroniz@ufl.edu.

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