

Student Spotlight:

Daniel Tucker
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1. Tell us what you love about horticulture.

I love that horticulture sits at the intersection of science and stewardship. It's one thing to study a rare plant — it's another to propagate it, grow it, and put it back into the landscape where it belongs. Conservation horticulture gives me the tools to turn research into real-world recovery for species that would otherwise disappear.

2. Why and when did you get into horticulture?

I came into horticulture through conservation biology. Working with critically endangered palms — some with fewer than two dozen wild individuals — I quickly realized that understanding how to grow and propagate these species was just as important as studying their ecology and genetics. My work at Montgomery Botanical Center deepened that connection.

3. What inspired you to go into graduate school?

Co-rediscovering *Sabal miamiensis* in the wild — a palm presumed extinct since 1997 — showed me how much undiscovered biodiversity is hiding in plain sight, even in South Florida. I wanted the training to describe new species, build genomic resources, and lead recovery programs, and a doctoral program was the path to do that.

4. What is your goal after school?

I want to continue leading applied conservation research — integrating genomics, ecophysiology, and horticulture to recover threatened plant species — ideally at Montgomery Botanical Center where I can mentor the next generation of plant scientists.

5. What is your favorite plant?

Sabal miamiensis — the Miami palm. It's a species I helped rediscover in the wild, and I've been leading its recovery ever since. It's resilient, beautiful, and deeply tied to South Florida's ecological history.

6. What would you research if you had unlimited funds?

I'd build a complete population-level phylogeny of the genus *Sabal* using target capture sequencing — sampling across every species and population to finally resolve the relationships and evolutionary history of this notoriously difficult group. Pair that with range-wide ecophysiological monitoring and you'd have a powerful framework for understanding how these palms diversified and how they'll respond to climate change. I'd also scale up the *Attalea crassipatha* recovery effort in Haiti — with only around 24 trees left in the wild, every year matters.

7. What has been the highlight of your graduate school experience so far? On the other hand, have you had any major research mishaps?

The highlight was co-rediscovering *Sabal miamiensis* and then describing a new species from the Everglades — turning fieldwork into formal taxonomy is incredibly rewarding. As for mishaps, tissue culture humbles you regularly. Endophytic contamination in coconut embryo rescue taught me that even a perfect sterilization protocol doesn't guarantee a clean culture when the fungi are living inside the seed. I also consider myself very lucky for not having any major research mishaps so far, except for some occasional unexpected weather events that sometimes interfered with data collection out in the field.

8. Do you have any advice for incoming graduate students regarding their academic and/or personal life?

Build things that outlast your degree — seed banks, living collections, datasets, relationships with land managers. Also, don't underestimate the value of practical skills like welding, wiring, or 3D printing; half of grad school is building the tools that don't exist yet. And take your fieldwork days seriously — they'll keep you grounded when the lab or the writing gets overwhelming.

