

February 2019 Student Spotlight

Joel A. Mercado-Díaz is a PhD candidate at the University of Chicago, originally from Cupey Alto, San Juan, Puerto Rico. Joel is currently working in the lab of Dr. Thorsten Lumbsch (Field Museum), where he is lucky



enough to conduct research in the Caribbean islands. The ultimate goal of his project is to understand the role of historical and evolutionary processes in shaping current lichen biotas in the Caribbean. Even though Joel works with different groups, work related to his project will focus on the family Lobariaceae which is one of the most diverse families of foliose lichens in the tropics. Previous work has shown that endemic distributions of members of this family in tropical islands are more common than previously thought. His plan is to combine integrative taxonomic approaches and phylogenetic comparative methods to begin elucidating this and other patterns of species diversity and distribution in the region. At present, Joel is focusing on generating morphological and multi-locus datasets from material collected in several islands including Cuba, Dominican Republic, Jamaica, Dominica and his home island, Puerto Rico.

This data will be used for inferring phylogenies that will help him understand evolutionary relationships of species at both within- and between-island scales. Dozens of new species are expected to be discovered from these efforts; as such, a great deal of his work will involve formally describing many of them. Joel will also be using phylogenetic methods of historical biogeography to shed light on the origin and evolution of geographic ranges of this family throughout the region. In spite of inhabiting one of the most important global biodiversity hotspots, Caribbean lichens remain poorly studied and understood. Joel's work will hopefully reduce this knowledge gap and

demonstrate that interesting diversity and biogeographic patterns in the Caribbean are not just limited to Anolis, but extend to many other groups of organisms including lichens. During his time as a graduate student, Joel has received several awards, including the Ford Foundation Pre-Doctoral Fellowship and MSA Mentor Student Award for IMC 2018.

What are your career goals/next step after your current position?

I am currently deciding what exactly is going to be the next step, but this might take the shape of a post-doc position abroad or perhaps going back to Puerto Rico to become a professor at one of our universities. Regardless of the next step, what I am very sure is that I want to expand academic and research opportunities for students that live in under-served areas of Puerto Rico. I also want to expand access to field experiences, hence I can definitely see myself working toward developing these types of opportunities.

What is your favorite fungus and why?

My favorite fungus is actually *Saccharomyces cerevisiae*. We owe so many tasty things to this amazing organism!

What is your favorite fact/thing about fungi?

Their ability to form mutually beneficial symbiotic relationships. There is so much for us humans to learn from fungi...

Who is your mycology role model?

My response is probably going to be the same as any young Latin American lichenologist: Robert Lucking. Apart from his impressive academic record, Robert has done numerous efforts towards increasing the appreciation for the Latin American lichen biota and have had a strong commitment towards increasing the number of trained lichenologists in this region. His efforts have resulted in exponential increases in the knowledge we have about the lichen diversity in our countries. He was the one to introduce me to lichenology back in 2004 and I am happy to still have him as a collaborator and friend. Thanks Robert!

Any great stories from field work?

So me and two collaborators/friends were hiking towards the summit of Blue Mountain Peak in Jamaica and along the way this guy (who was evidently intoxicated) stopped us to ask us about our work. I think I remember saying that I was a doctoral student and that I was collecting lichens which was (to make it easier to understand) a type of fungus. Probably because he heard the words "doctoral" and "fungus", the guy suddenly decides to take one of his boots off to show me his clearly infected toe. I told him, "I am not working in that type of doctoral degree, however, I am sure that toe is very infected and you need to seek medical attention urgently. Actually, you shouldn't be doing this hike!". He looks at me, and with a smile put his boot back and keeps walking. So hilarious!

What do you like to do in your free time? What are your hobbies?

Climb, go for hikes and bike rides, beer brewing, collect latin-jazz vinyls, watch movies and Netflix.

Anything else we should know about you?

I will take the opportunity to open up a bit with the hopes that my words do good to someone out there: Being a PhD student is tough and it's almost impossible to often feel that you don't belong. You are not alone. Stepping back and thinking about the things that originally motivated you to pursue the degree always helps. Chatting with friends and physical activities are also good for clearing up the head. Lastly, having a PhD is probably great, but most important is to have passion for whatever you do, remember that. Let's keep putting our best effort and keep going, one step after the other!