

Student Profile

Tiffany Batarseh – Ecology and Evolutionary Biology PhD Program



Your Time at UCI

What made you decide to pursue a graduate degree?

As a first-generation American and college student, I was not fully aware of the career opportunities that were available to me with a biology degree. I just knew that I loved biology and wanted to get a job where I could apply the skills I would learn from my major. I did not make my decision to pursue a graduate degree until my 3rd year of university.

After taking microbiology and molecular biology classes at my community college, I started to acknowledge which fields of biology interested me the most, those topics being genetics and microbial systems. I transferred to UCI to complete my bachelor's degree and I made it my priority to join a lab. My experiences as an undergraduate researcher really cemented my love for working in a lab and being able to challenge myself. With the guidance of my undergraduate PI and research program director, I learned about graduate school and how this career path would let me continue doing what I loved. Having a career where I can conduct research, continue to learn, and challenge myself was what I wanted. Together, all of the experiences I had in my first few years of university helped shape my path to pursuing graduate school to become an independent scientist.

Why did you choose to come to UCI?

Growing up in Southern California, I knew that I wanted to be a part of the UC system in order to get my bachelor's degree as these schools are on the forefront of knowledge and have rich scientific research environments. So, after receiving my bachelor's degree it was no question that I would like to stay in the UC system for my graduate studies. At UCI, there were quite a few faculty members whose research I was interested in when choosing schools to apply to. Specifically, in the Ecology and Evolutionary Biology Department that I am a part of, there are many faculty members whose research involved microbes which I wanted to pursue. There is also a strong collaborative environment in this department which felt unique compared to other schools I had visited, and this collaboration fosters great relationships among the labs.

Aside from the academics, UCI is a beautiful campus. I have always loved Aldrich Park and all of the green found throughout the school. The city of Irvine has everything you'd need to live comfortably, and the location is so close to tons of fun things in Southern California. Overall, UCI has expertise in both academics and research, and the lifestyle here is fun yet relaxed for a SoCal location.

If you are conducting research, how would you explain your research and its significance to your grandparent?

I study bacteria, which are microscopic, single-celled organisms that are found on almost every surface of the world, including on our skin and within our gut. Although most people only ever hear about disease-causing bacteria, bacteria are also important in the ecosystem and for our own bodily processes as well.

*I am interested in the way bacteria respond to their environment and how they change over time to the stimulus they are experiencing. I primarily study two different species of bacteria: one, called *Escherichia coli*, found in our gut and used commonly in biological experiments and another, named *Xylella fastidiosa*, that causes disease in plants that produce economically important crops. Bacteria are a great organism to use for experiments since they tend to grow quickly and in large amounts.*

*With *E. coli*, I am analyzing different mutations that occurred following an experiment in which this species was grown at a temperature 5 degrees hotter than its ideal temperature for a year. I am investigating how those mutations change how long it takes to grow to a certain number in its population and how it changes some general patterns of products it produces when it grows. Studying specific mutations that occur is important as linking these mutations to a visible change in an organism will help us understand how organisms adapt to their environments. Knowing how *E. coli* can adapt to raised temperatures could help us generally predict how other bacteria or organisms could respond to increasing temperatures in the world, as well.*

*With *X. fastidiosa*, I am interested in comparing and contrasting different individuals of this species that were isolated from different plants. This species can cause disease in citrus, coffee, grape, olive, and oleander plants to name a few. I am interested in seeing if there are any differences in the DNA composition of different individuals taken from different plants. Differences in the DNA could be the reason for how different strains can cause disease in certain plants but not in others. This would be beneficial for the management of the pathogen.*

What are your hobbies/passions outside of research?

I would say I have two interests that come to mind immediately. Since I was a teenager, I have always been interested in music and make-up, and I spent a rather large amount of my spare time on these two topics.

When you look at me, you probably wouldn't think I listen to rock, alternative, or metal style music, but I do, and I have since I was in middle school. I love to listen to music and go to concerts to see my favorite bands, it really is a form of relaxation for me to watch a band play! I'm open to a lot of different styles of music, so I also enjoy dancing to pop or electronic style music as well. I was on my high school dance team for a couple of years.

I started wearing light makeup in 8th grade, and from then on, my passion for makeup grew. I loved wearing it, trying out different styles and colors, and I even got a job at Sephora in Manhattan Beach, CA when I turned 18. There, I was certified as a makeup artist and worked weekends there doing people's makeup for just under 5 years. I still love doing my makeup and putting it on my family and friends. I also still buy way too much of it!

Reflections

What advice do you have for a new graduate student in your program?

I would sum it up as be curious, be organized, and learn to enjoy getting out of your comfort zone.

Graduate school is about learning and exploring unanswered questions for your dissertation project, so you should have a curiosity to read and explore what is known and start thinking about what the next steps when you are done reading an article. Enjoy the reading process and also question it!

With reading and everything else you will be doing in lab and in classes, it definitely will benefit you to be organized from the beginning. Find a way that you can store your notes and search them easily, get a citation manager to keep papers you've read, and look into a planner. Don't wait until everything is piled up to try and organize then!

Lastly, graduate school is going to push you outside of your comfort zone in different ways. Perhaps you'll have to lead the discussion of a paper in your ecology class, try out a new experiment all on your own, present the project you're starting out to your fellow peers in 2nd year, or be a TA for an undergraduate lab course you haven't taken before. While this may feel uncomfortable or make you feel nervous, start to learn to like it as you will learn from each of those experiences. Even if it does not go exactly as you planned, you will know what to do next time and over time it will make you a better scientist, communicator, or teacher. Being pushed out of your comfort zone is a good thing and you can grow so much from it.

Career

What do you see yourself doing in five or ten years?

Following my graduate studies, I will like to continue in academia with the overall goal of being a faculty member with my own research lab. In five years, I will most likely be in a postdoctoral research position at a different university and preparing for faculty job applications and interviews. I could be anywhere in the United States and I cannot say for certain where I will be at this point as I am open to moving around for a post-doc position.

In 10 years, I would like to be settling into my faculty position, pursuing my independent research with graduate students and post-docs in my lab. I want to provide those in my lab with great mentorship and excitement about science. I would also like to mentor students who, like myself, are first generation or part of underrepresented minorities to inform them about careers in science and the appropriate ways to get there while motivating them along the way.