I. Teaching overview: I strive to achieve three goals in all teaching endeavors: to help students retain critical concepts and stimulate independent thought, to transmit a passion for critical inquiry, and provide students the tools needed to rigorously ask and answer questions. I use multiple techniques and tools to achieve these goals. **First, I excite and interest students in the material**– I care about student success and show passion for the material taught, and I encourage critical thinking. Second, **I am committed to providing students my time, energy, and passion** in order for students to achieve their goals, answer their questions, and promote independent inquiry. Lastly, **I value equity in student engagement, learning, and opportunities**– understanding that students may fall behind because of unequal opportunities due to gender, socio-economic opportunities, or ethnicity. These three core tools and values are interwoven, providing the foundation for my approach to teaching and mentorship.

II. Teaching philosophy and mentoring style

The first step to be an effective teacher is to excite and interest students in the material. One way to achieve this goal is to identify what students are enthusiastic about and find a way to integrate that interest into the topic I am teaching. At the beginning of each course I teach, I survey students asking, "what topics interest you?" and "what are your ultimate career goals?" Then, I integrate this information into my lectures by providing relevant examples related to their topics of interest. For example, the majority of my *Introduction to Biology* lab sections were pre-med students, so to interest them in the material we were learning (i.e., ecosystem dynamics, phylogenies), I incorporated examples of how this material was related to medicine. In doing so, 85% percent of my students strongly agreed that I was an effective teacher. Two students from my introductory to biology lab sections commented: (1) *"… I could not have asked for a better TA. Not only did Grace seem passionate and knowledgeable on the course, but she put extra effort into engaging the class and making sure every student clearly understood the material. I loved working with Grace and I would highly recommend for anyone to have her as a TA. She made the lab experience more enjoyable for me*", (2) "*I love Grace! She's so awesome and made a boring Bio Lab seem interesting. She's very caring and always wanted us to succeed. She was very fair and encouraged us to work hard*". And finally, this student's comment from the *Introduction to R* course I co-taught exemplifies the fact that I related the statistics I was teaching to biological examples that they were interested in– "*I learned more about stats from Grace's introductions to the material than in the graduate level biostats class I'm currently taking. She's an excellent teacher; clear and concise.*"

I have a strong willingness to give of my time, energy, and passion– to foster critical thinking skills in students. In September 2015, I TAed for the first time, and I taught two laboratory sections of an Intro to Biology class. One section was of higher-level undergrads that did not seem to care for the material, while the other section was of honor scholars from the freshman class who cared tremendously about grades. The honor's students quickly became my favorite, and it showed in my teaching, where I unconsciously put more effort into teaching the honor scholars section. My higher-level undergrads recognized and did not appreciate my favoritism, and once I felt their dejection, I changed my attitude- realizing my favoritism and making an effort to show them that I cared about their learning. Instantaneously, they changed their attitude about the class, and it changed my relationship with the students tremendously. From this experience I learned that to foster critical thinking skills in students, the teacher needs to be willing to work with students of any age, educational background, and stay away from favoritism.

In May 2017, I conducted an experiment rearing 650 tadpoles at the University of California, Santa Barbara for 31 days. **I directly involved 29 undergraduates in the experiment**, making a particular effort to involve students from diverse backgrounds, including women, minorities, and underrepresented groups. **Of the 19 women helping on the project, 13 of them identified as a**

minority, and of the 29 total undergraduates working on the project, 22 identified as a minority. As I worked alongside the students, I explained the objectives of the experiment, answered students' questions, gave full explanations of what their tasks were, and how well they were progressing. Four students developed independent projects from this larger experiment. I mentored and guided these students to collect the data for their research projects, defining hypotheses, developing methods, presenting results; all of these students are currently writing manuscripts for submission to a peer-reviewed journal. I accomplished both of these aspects (i.e., training and mentoring) during both my PhD and postdoc. From this experience, students wrote that they, (1) "*took away a lot of organizing, sterilizing, and learning [skills] to work in a close team environment which was encouraging and fun to work with. This lab has opened my eyes to large scale research experiments as well as the field of emerging infectious disease…*", (2) "*A better understanding of how a lab functions; animal husbandry skills; understanding academia more clearly*", and (3) "*I learned problem solving skills, collecting and managing data, how to make scientific posters, present at lab meetings, how to read scientific papers, what a career in academia looks like, and networking [skills].*" During my PhD, I also co-authored papers with four undergraduate students I mentored.

As a female Latina raised in a low socio-economic household, I value equity in student engagement, learning, and opportunities. As a teacher, I understand that not all students come from the same background or were given the same learning opportunities. Therefore, **I use active engagement as a critical tool in promoting an environment where the student feels valued for their contributions and safe to develop their creativity and independent thinking.** I use a variety of techniques to achieve this goal. Students engage with the material through large group discussions, small group work, and I ask specific questions to sections of a classroom. Students that do not normally answer questions are given the opportunity to participate. From my experience, introverted students are more likely to answer questions from these three methods. This framework works well in large and small lecture settings and has the positive effect of: (1) encouraging different students to speak in front of the class, (2) giving students the opportunity to teach and learn, and (3) providing the opportunity to communicate and challenge ideas, thereby fostering students' abilities to build critical thinking capacities. In this way, I ensure that students have the same opportunities in the classroom. No student should fall behind because of gender, social status, or ethnicity.

III. Summary: In all aspects of my teaching and mentorship, my pedagogical strategies are dedicated to fostering critical independent thinking and providing the tools students need to rigorously ask and answer questions themselves. I found that the best ways to do this are by: exciting students about the material, providing students my time, energy, and passion, and by valuing equity in student engagement, learning, and opportunities.

IV. Teaching interests: At the MA Coop Unit stationed in the University of Massachusetts, I am eager to teach graduate courses related to quantitative ecology, disease ecology, and population/community ecology. Specifically, I am well equipped to teach **advanced quantitative classes**, such as Ecological Data Science (a class on programming, learning to use the super computer, and how to make your science reproducible) and Quantitative Methods in Ecology (a class focused on Bayesian inference and analyzing field data – such as CMR models, state-space models, and the value of simulating data). Classes related to **disease ecology** that I could teach include: Emerging Infectious Diseases (focused on emerging pathogens, mass mortality, patterns of pathogen invasion) and General Disease Ecology (includes infectious & non-infectious diseases, epizootic and enzootic disease dynamics). Lastly, I am also well equipped to teach **advanced population and community ecology** classes, such as: A Current Topics Seminar (based on population/community ecology, where it is discussion based and focuses on reading papers), and Methods in Population and Community Ecology (focused on delving into the cutting edge methods of recently published papers and reproducing them).