

## **Teaching Statement- Lara D. LaDage, Ph.D.**

As a former student and teacher, I understand the value of not only the acquisition of biological facts but the flexibility to use those facts to reflect and incorporate new information in a meaningful way. As a former student, I understand the difference between learning facts and learning how to think independently using those facts as a foundation. As a teacher, I recognize the importance of incorporating both aspects in my teaching, whether I'm teaching in the classroom or the laboratory. I taught two lecture courses during my graduate studies, Introduction to Biology (119 students) and Vertebrate Zoology (25 students), in which I attempted to not only impart facts but encourage critical and analytical thinking. By asking open-ended questions and requiring written assignments, students had to rely on their bank of factual knowledge while maintaining the flexibility to use their knowledge to construct new hypotheses, intellectually converse about the biological, philosophical and social relevance of such information, critically think about scientific literature and clearly and succinctly relay information. By conducting my courses this way, students are not only acquiring information but, equally importantly, students are learning to learn. I believe because I've employed such techniques, my students have gained the experience of what it truly means to learn and discover.

Another important issue in education is the importance of different learning styles of students. In addition to academic instruction, I also serve as an assistant instructor in the martial arts. From both of these teaching experiences, I've witnessed that students learn in vastly different ways- visual, auditory, visualization, and physical. I've learned to subtly tailor my teaching to the learning style of my students, especially during one-on-one interactions. Although I recognize that I cannot completely meet the learning style needs of all students in a large classroom setting, I attempt to incorporate several different means for the dissemination of information, including small group discussion, short video clips, PowerPoint, lecturing, internet discussions, and hands-on learning through laboratory exercises. I believe presenting the information in a variety of ways is important so as to reach as many students as possible, so they can fully grasp the concepts being taught.

For students that want to pursue careers in biology, especially in the research capacity, they must have a sufficient background in how scientists go about designing a study, collecting data, and reporting results. While my own personal research philosophy has been formed through my training, I am also committed to the development of my student's foundation in scientific research. One of my primary goals as a researcher and a teacher is to stimulate students' thinking about the complexity, elegance, and multi-faceted nature of science. I believe in cultivating a student's proficiency in scientific fluency, advanced through independent thought and creation of hypotheses, logical problem-solving and clear dissemination of results. To this end, in some higher level courses, I ask students to develop their own original research projects that can be performed within the semester's time frame. Students must come up with a question, design a study around that question, collect data, analyze data, and come to logical conclusions, all within the structure of the class and with my assistance. By doing so, I believe this develops a strong foundation on which students can build and eventually become independent researchers.

For students pursuing a degree in the biological sciences, I believe teaching in the classroom and teaching students in my laboratory are not dichotomous activities. I strongly believe in engaging and encouraging students in all aspects of the research process in the laboratory setting. I've mentored several high-quality undergraduates during my graduate and post graduate positions, encouraging them to create hypotheses based on the published literature,

designing their own independent studies, data analysis, and reporting results in a public forum. Further, one of my outstanding undergraduate students was included as co-author on one of my published papers (RA Simmons from LaDage et al. 2008) while two recent students did research on and will be co-authors on an upcoming manuscript. Additionally, I have mentored 8 undergraduate students at the University of Nevada, Reno. I have recently obtained an NSF REU which will provide a talented undergraduate with the opportunity to conduct their own study and ultimately publish their research. Keeping with this commitment of teaching students within a laboratory setting, I anticipate a highly diverse lab, composed of undergraduates through post docs. I anticipate involving students in all aspects of my research, as well as supporting them in their own research projects. Because my research is highly integrative, my students will have the opportunity to develop their research projects in one or more different sub-disciplines. Additionally, my research allows for students to conduct laboratory studies in the physiological, developmental, and neuroscience aspects and/or field work in the behavioral and ecological portions of the research. By teaching students how to conduct sound scientific research, we can produce students at UC-Riverside with the desire, knowledge, and skills to graduate and become productive members of the scientific community.

I completed my graduate studies in Memphis, which is made up of diverse peoples, many of which are traditionally underrepresented in the sciences. I had the opportunity to teach and mentor undergraduate students from diverse ethnic groups, especially because of the NSF's Undergraduate Mentoring for Environmental Biology (UMEB) grant. This grant funded the research of undergraduate students from traditionally underrepresented ethnic groups and our lab usually had at least one student funded from this particular grant. Additionally, I have recently taught at Truckee Meadows Community College, under their NIH-funded Biomedical Student Pipeline Program. This program solicits students from traditionally under-represented groups in science, first-generation college students, and/or lower income families. The goal of the program is to help students develop critical thinking skills, expose them to techniques commonly employed in biomedical research, provide tutoring, and expose them to and encourage them to pursue a career in the sciences. I think that it is important to encourage traditionally under-represented students in the sciences, as the attrition of minorities in the sciences is disheartening. Perhaps through strong mentoring programs and a commitment to diversity, the loss of such potential talent in our field can be mitigated.

Finally, I believe the extensiveness and diversity of my training will allow me to teach a broad variety of courses at UC-Riverside. I feel confident that I could complement the current faculty in the Department of Biology in terms of the courses I could teach.