Philosophy

I view teaching as one of the most important components of my professional life and personally I feel it is among the most honorable professions. I am driven to share my experiences and knowledge of nature because I know that teaching is my opportunity to pass on the wonderment and appreciation that I have for the natural world. Persons able to unite enthusiasm for the subject with strong communication skills will ultimately succeed in any venue of instruction. I feel that I am such a person.

I truly enjoy interacting with students on all levels from large-scale lecture courses to one-on-one mentoring. My students have consistently stated that I am an exceptional teacher and, as a graduate student, I received three faculty-nominated teaching awards. As a Master’s student and then as an employee at the DOJ DNA Laboratory in Berkeley, CA, I had the opportunity to instruct a DNA techniques course. As a graduate student and postdoc, I have had the opportunity to teach a variety of laboratories as well as guide undergraduate and graduate student research. Through all of these experiences I have gained unique insights into how different students learn and how to become a better teacher.

One of the keys in getting students to learn and retain facts is to link new facts to previous knowledge. To accomplish this in the classroom, I emphasize how material from previous class periods is related to new material, and I like to incorporate an outline to organize and place each lecture within the syllabus. I especially like to use phylogenetic trees to organize material in organismal courses such as Herpetology, Ornithology, or Vertebrate biodiversity. For example, after reviewing the higher level (coarse-grain) phylogeny at the beginning of class, I can then focus the bulk of the lecture on some aspect within the lower level (fine-grain) relationships such as locomotory adaptations among anuran families. At the end of lecture, I return to the higher level tree (e.g., of all tetrapods) so the students can see where this new material fits within the larger (phylogenetic) picture.

Because multiple learning styles exist, it is important to utilize different pedagogical methods in an attempt to engage all students. To do so, I often use literal and mental images to reach those who are visual learners. For example, when discussing protein synthesis within cells I like to draw a large picture of a cell and then trace the location for each of the major parts of the process: DNA (transcription) to RNA (translation) to proteins. It is very easy for a visual learner to then link these processes to their respective organelle location within the cell and this gives them a visual structure to store and then recall the information later. For tactile/kinesthetic learners I encourage active learning within small groups. Each group is asked to design an organism to deal with a given set of environmental parameters. Students then vote on which organism is the best for the job and winners could get a reward such as candy or, more appropriately, a free Ipod song. In larger classes where interactivity is more limited, I encourage students to review material in small groups by testing each others retention. A trick that I was shown as an undergraduate was to formulate game show type questions and then to quiz each other, keeping track of individual scores. The professor would get things started but it is important for the students eventually formulate their own questions as this process helps them anticipate actual exam questions. As students become better at playing the game, they become empowered, gaining the confidence necessary to do well on the real examination.

Throughout my graduate and postdoctoral work, I have had the opportunity to supervise a number of graduate and undergraduate students in the classroom, in the lab, and in the field. I am excited about developing an interactive and energetic lab group that focuses on evolutionary ecology of reptiles and amphibians. I will encourage students in my lab to develop their own projects ideas. By doing so, I believe that students achieve ownership of their own work and become invested in completing it. Most importantly, I will encourage students working in my lab to communicate results of their work verbally at regional scientific meetings and in writing.