Statement of Teaching Philosophy

In the geosciences, we seek to understand broad-scale, almost infinitely complex systems and processes, many of which occur in spaces and timeframes that are not directly accessible to our research efforts. The primary challenge of geoscience instructors is therefore to shape curricula and frame coursework such that students develop a simultaneously comprehensive and precise understanding of geologic processes, without overwhelming the student or resorting to rote memorization of complex concepts. With over four years of experience instructing hands-on lab sections for undergraduate geology major courses, I have had the opportunity to develop as an educator and refine my teaching style and techniques to maximize student comprehension and engagement.

My primary goal for my students is to develop the critical thinking skills required to tackle complex geological problems. I believe in minimizing assessment based on rote memorization (quizzes, closed-book tests), as I have not observed good correlation between a student's performance on these types of assessments, and their overall comprehension of the material and their critical thinking skills. I always encourage students to be actively engaged with the material, their classmates, and me. Each of the past four academic years, I have taught lab sections for two courses required for UCLA geology majors: EPSS 51: Mineralogy in fall quarter, and EPSS 103A: Igneous Petrology in the following quarter. Not only has this allowed me to become more familiar with the students I have two quarters in a row; I have been able to shape the coursework and expectations of my lab section in Mineralogy to optimally prepare my students for their first upper division lab class, Igneous Petrology. In addition to using assessments to gauge comprehension and retention of concepts, each winter I see the outcomes of my instruction in the previous quarter, and I have used that information as an additional tool to refine and reinforce particular skills and concepts. Rather than becoming complacent with familiar course material and exercises, I make a continuous effort to improve my teaching and assessment techniques according to my experience.

As a teaching assistant I was afforded latitude to modify the delivery of the laboratory curriculum. One of the ways I have modernized instruction in my courses is to implement research-based learning modules: in Igneous Petrology, for example, I recently eliminated the final lab exam and implemented a quarter-length research project. This project was designed to mimic the process of scientific research and emphasize the skills I believe are most valuable: scientific curiosity, critical thinking and data interpretation, and communication of scientific results. Students formulated their own research question and wrote a proposal, which I evaluated for background research, feasibility, and scientific merit. I worked with students to refine their hypotheses, locate and prepare specimens for analysis, and I introduced them to new analytical methods and data sources as needed for their project. To maximize students' choices for their projects, I obtained a UCLA Office of Instructional Development "Mini-grant" of $250 to allow students the option to have thin sections made of samples they collected. At the end of the quarter, students presented their results to their classmates in conference-style 15-minute presentations, and wrote letter-style articles for the fictive "UCLA Journal of Igneous Petrology". I believe this type of project gives students the opportunity to feel greater ownership and a sense of accomplishment in their learning. It also allows more flexibility for students who may not perform to the best of their ability in traditional exams.

A benefit to developing this inquiry-based pedagogical approach during my time as a TA is that graduate-level coursework requires similar approaches that emphasize critical thinking,

problem solving, practical skill-building, and communication of results with concise writing, data visualization, and oral presentations. My experience with these learning goals in undergraduate laboratory courses has prepared me to formulate unique and productive graduate courses and seminars. The development and application of creative, effective teaching tools is one of my core pedagogical goals; in the future I look forward to exploring alternative teaching methods including a flipped classroom, virtual learning tools, and peer-instruction exercises.

In accordance with my commitment to developing students' learning skills in addition to topic-specific proficiency, I believe an accommodating classroom is an effective classroom. Students are a lot like the minerals and rocks I teach them about: they come from a wide variety of settings, have varied ages and histories, and each require a somewhat different environment to develop and grow. A student who started university at 18 years old and lives on campus will likely have different needs than a commuter student who transferred from community college. First-generation college students will adapt to and experience university life differently than students coming from families for whom terminal degrees are the norm. Students may face learning obstacles due to personal circumstances such as children, athletic commitments, financial hardship, or disability status. Not everyone will find success in a one-size-fits-all learning environment, despite their academic potential. I tell my students at the beginning of every quarter, "my job here is to help you succeed in this course", and I do my best to turn those words into action. I believe I have a fundamental duty to help students succeed in my classes and learn important skills, even if that means making accommodations or being flexible in the way I present material. I balance this flexibility and accommodation with an uncompromising standard of excellence for students' work.

The corollary to an accommodating classroom is a classroom which accepts and uplifts students of all identities. Science fields face a serious challenge to improve diversity and inclusion along the axes of gender expression, ethnicity, sexuality, and socioeconomic circumstance. As an early career educator working to develop the next generation of geoscientists, I feel it is fundamental to my teaching mission to bring access and success to students from all walks of life, not just those who see themselves reflected in the stereotypical white male scientist. At UCLA I have had a special opportunity to work with one of the most diverse student bodies in the country. Teaching this unique population of motivated students has not only given me experience with a wide range of individuals, it has also given me a powerful opportunity to uplift and encourage students who may not feel traditionally welcomed by academia. I prioritize an open an accepting classroom where everyone can achieve, regardless of identity. It has been especially rewarding to me as a young woman scientist to help educate and inspire other young women to develop their skills and pursue their goals in the classroom and beyond.

I am passionate about sharing my knowledge and helping educate the next generation of geoscientists. I believe being a good teacher and mentor is one of the most important ways I can promote science. Through innovative teaching tools, flexibility in the classroom, and a high standard of excellence, I bring students of all backgrounds together with a shared enthusiasm for Earth science and the natural world. In my future teaching endeavors, I look forward to expanding upon the experience and creativity in the classroom that I have developed, and continue to inspire excellence and a love for the geosciences in my students.