

Jay Love: Teaching and Mentoring

There are few joys greater than seeing the eyes of a person light up when they make a discovery or a new connection between ideas. These moments have been some of the most rewarding elements of my career so far. At Deep Springs, I will continue to take seriously the impact I have on the lives of the students and members of the community with whom I interact.

Teaching Experience: I have actively pursued a range of teaching experiences. In graduate school, I taught weekly lectures and breakout discussions for large seminar courses, and also assisted in teaching a weeklong field ecology course. More recently, I independently developed and taught a two-semester research-intensive course series on Systems Biology to freshmen. In an effort to boost retention, particularly among students who would historically experience difficulty interfacing with academic research, the Utah state legislature funded a program to engage early undergraduates in real research experiences, and I was selected to lead a course stream. Over a year (Spring - Fall 2024), I implemented a teaching model where students with only very basic understanding of Biology were introduced to advanced concepts gradually. In addition to my weekly lectures, beginning with introductory ecology and evolution and progressing to more advanced concepts, students learned to read and discuss scientific literature and extract information from complex analyses. Students also worked on a group research project, evaluating measures of vocal diversity in a songbird clade, and were supported in developing their own research projects during the summer session. Two students opted to conduct fieldwork, taking automated recording units to the field (in Glacier National Park, Montana and Kruger National Park, South Africa) and comparing biotic diversity estimates made from those recordings. At Deep Springs, I will build on my experience with these active learning methods, helping students from diverse backgrounds include science in their view of the world.

Mentoring Experience: I have also had the great pleasure to mentor advanced students in more typical research settings. One student finished their master's degree under my co-mentorship, another his undergraduate honors thesis. Another undergraduate student, who I trained during my time in neuroscience, went on to continue the project that we started together as the research portion of her MD/PhD – the results of which are slated for submission to a high-impact journal in winter 2025-2026. It has been a fantastic personal experience to see this young researcher grow in her expertise in her chosen discipline, now far outpacing my own.

Philosophy: These experiences have helped me to develop a simple teaching philosophy: *expect your student to surpass yourself*. Knowing that, in science, everything we think we know today will tomorrow be proven wrong, I am always anticipating that my student will be that person to expand the boundaries of our communal knowledge. At Deep Springs, I will voice this truth of science upfront in order to garner a natural curiosity, humility, and respect for all students in the classroom and to consistently encourage those with diverse perspectives to be fairly heard.

Teaching Interests: At Deep Springs, I would enjoy teaching a range of courses, from introductory seminars to more targeted, upper-level courses. I love teaching introductory Biology, Ecology, and Evolution, and advanced topics in behavioral ecology and systems biology are especially attractive to me. It would be a joy to teach a natural history course or a short session in field ecology. I could also contribute to jointly-taught classes on quantitative methods, especially practical courses that include a significant hands-on component (see CV).

Please see the following page for sample descriptions of courses that could be taught at Deep Springs, if the Curriculum Committee is interested.

What is life (2026)?

Tracing the evolution of life from the earliest forms of self-replicating matter to the present day, students will engage with traditional subjects in an introductory Biology course, but with the goal of understanding, from a metaphysical view, what life is and what life is not. We will follow the lead of Erwin Schrödinger's classic lectures of the same title, and using the same logical style, construct the present state of human understanding of life 85 years since Schrödinger posed the question. The course format is largely discussion-based, with text supplements to include a basic textbook covering cell, molecular, and evolutionary biology, and drawing from excerpts of landmark papers. The session concludes with the compilation of student writings over the semester into a manuscript with intention to be submitted as a perspective piece to *Trends in Ecology and Evolution* or *American Naturalist*.

Natural History of Sage

Sagebrush dominates huge swaths of the Western United States. This terrestrial ecosystem appears to the untrained eye as monotone, but a closer look reveals delicate complexity, biodiversity, and remarkable resilience. In this course, students will zoom in on the humble sage with field-based exploration and supplementary study to understand the sage life cycle, ecology, and landscape. We will seek to understand the importance of sage in the modern, human-dominated era, and question how land-use practices can support balance in the sage steppe. On the way, we'll learn about soil chemistry and microbiota, the life cycles of plants (and the differences between angiosperms and others), entomology, and ornithology.