

## Jacquelyn Prestegaard – Teaching Statement

Animals are living and unique, with ever-changing needs and designs. As such, so should be an animal science curriculum. It is a field that demands not only an understanding of biology, but also an understanding of stewardship and global trends. A successful animal scientist is aware of their role in establishing food security, biosecurity, and job security for farmers and ranchers across the world.

Although these are the overarching goals of an animal scientist, they are grandiose ideas that are lost to undergraduates spending their days in lecture after lecture. At the college-level, biology, chemistry and physical science is highly emphasized in animal science, mostly to prepare students for the onslaught of veterinary school. However, in an attempt to disseminate as much information as possible, the concepts in these courses are rarely applied to anything besides three exams per semester.

As I evolve from an absorber to a propagator of information, I've realized that not all people learn in the same manner. As such, teachers should be inclusive to all types of learners. While some may learn by simply reading words off a PowerPoint, other people need visual cues. Many students need to physically perform a task to grasp its meaning. With this in mind, there are three methods I believe most effectively promote successful application and mastery of knowledge.

Firstly, real-world scenarios through which students find solutions give them an idea of the grander scheme of a concept outside the classroom. Next, visual depiction of ideas increases effectiveness of retention versus reading script alone (how many students turn to YouTube to find tutorials on a given subject?) Finally, allowing practice and reflection of newly learned information gives students time to introspect and critically evaluate material.

During my two years TA'ing a Ruminant Nutrition course, I found the concepts that stuck with students most were the ones where hands-on application was involved during the learning process. Giving students information about dietary dry matter, fiber and protein did not register fully until they were asked to sit down and actually formulate diets using these parameters. We guided students through a multitude of scenarios and showed them how dietary characteristics should differ depending on an animal's stage of growth or production. Even though these concepts were described in lecture, it was evident that through these exercises, students understood more clearly the needs of individual animals as well as the science behind ruminant metabolism.

In the same course, we set up continuous culture fermenters to not only replicate rumen conditions, but also to show how "feeding" the fermenters allowed our lab to understand how ruminal microbes use and transform feedstuffs. It was clear that a visual walkthrough of the research process was effective; when asked about rumen conditions on the subsequent exam, students performed significantly better compared to the previous year when the process was simply discussed in lecture.

Science is always becoming better; the way it is taught should strive to do the same. As an educator, I want students to involve themselves, rather than just consume knowledge. Sometimes interest precedes involvement – sometimes, it's the other way around. No matter which comes first, I want to facilitate sharper, more prepared minds stemmed from experience and engagement.