# Teaching Philosophy: Rachael Adams

The main purpose of education is to learn, but one must realize not all students learn in the same manner. My teaching philosophy centers on providing the best possible environment, multiple ways of learning the material, and all of the additional tools necessary for my students to learn. To fully implement this style of teaching requires great expectations from both my students and me. As an undergraduate I felt there were many Professors and Graduate Student Instructors (GSIs) who approached teaching as a requirement, rather than doing everything possible to help their students learn the material. Therefore as a teacher it is my mission to dedicate myself to my students and their learning of the material for the entire duration of the course and beyond. I feel I would be failing myself and my students if I did not give every task, from teaching a key concept to generating meaningful assignments, my absolute best effort. Students in science classes need to learn not only the facts, but to learn to apply those facts to hypothesize, test theories, interpret data, and formulate conclusions. As I go further into my scientific career I continue my belief that a teacher of science should devote herself to helping her students learn the principle concepts and how to apply them to scientific problem.

Each and every one of us experiences the science of life everyday and in teaching the course "Biology for non-scientists" I strove to make my students aware of this fact. Many of the students were taking this course to fulfill their natural science requirement, not due to their interest in biology. This meant that I had to work very hard to pique and maintain their interest in the material. I found that a good way to accomplish this was to reference current events, news articles and personal experiences and then relate them to the principles of biology. This strategy was effective since it took a concept that seemed abstract for the students and made it into something very real and one they could easily understand. I plan to continue this strategy in my future courses by first reviewing background material, then introducing the basic concepts, and finally building on these basics with current examples to reach the desired level of complexity on the topic. By following this I will also be able to help my students learn to interpret data, question current ideas, formulate their own theories, and describe how to test those theories. Whether the students realize it or not, they will be building skills that are required of not only scientists but also of consumers in society.

It is my belief that teachers should present class materials in a variety of formats to help ensure the entire class learns the material. For this reason in my classes I use lectures, visual learning aids, computer exercises, organized notes, diagrams and current events to present course material. Since not everyone can learn all of the material during class time, voluntary attendance at my office hours, exam reviews, and extra appointments is always encouraged. In my previous experience many of my students took advantage of this not only to discuss course material, but also to get advice on attending graduate school in the future, or a biology related personal problem they were having. This course consisted of lecture and discussion sections: there were no "hands on" lab experiences to demonstrate what science research is all about. Since I felt this was important not only for the students' learning but also to pique their interest in science, I invited my students to come into the laboratory to see what I do everyday. A large number of students took me up on this offer and subsequently came in small groups, during their free time I might add, and learned about cell culture, restriction enzyme mapping, and agarose gel electrophoresis. These were all topics we had discussed in class and I think they left with a

much greater understanding of the processes involved by experiencing them first hand. In addition, on several occasions throughout the semester I seek feedback from my students on my teaching performance and then adjust my teaching methods to meet their needs. This helps ensure that I am doing everything possible to help ensure learning of the material by all of the students.

It is also important to understand that not all students perform well on all types of assessment. Therefore I prefer to utilize multiple methods to assess students' learning and ability to apply the concepts. These methods include tests, impromptu quizzes, short writing assignments, oral presentations, and self-assessment. Tests in introductory level courses will include both multiple choice questions, short answer, as well as one short essay question. This format will test their knowledge of the basic facts, but will also require them to use some critical thinking skills. In advanced courses tests will include both short answer and essay questions. This change in format reflects the vast amount of critical thinking and problem-solving skills that are necessary for any scientist.

Words cannot describe the sense of accomplishment a teacher feels when you see the "light bulbs" go on for your students and know they truly understand a concept. As an undergraduate I had one great professor who truly changed the way I thought about biology and to whom I will always be grateful. I would like to spend my career in teaching being that same great professor to my students.