My philosophy on teaching can be best expressed in one word: “connections.” As a teacher, my role is to establish connections with and for my students. I must connect the subject matter with their future; their effort with a rewarding outcome; enthusiasm with accomplishment; intellectual discipline with academic freedom; and motivation with mastery.

As these connections between teacher and student develop, a virtuous cycle emerges. The encouragement of a teacher in the role of mentor and leader yields an increasingly motivated and intellectually curious student, which in turn makes the teacher more enthusiastic and effective.

My personal history underscores the importance of establishing rapport with an instructor. When that occurred, my understanding and achievements traveled past barriers I didn’t always know I had developed. Rather than the teacher being "nice," or even charismatic, what has always been effective for me is when my instructor could communicate an infectious joy and wonder at the world, a sense of our place in it as explorers, and our role in discoveries and rediscoveries of knowledge important to our lives and aspirations.

I have used this insight in my own experience teaching students. While a teaching assistant for a graduate level class in dynamics and kinematics, I made a great effort to capture the students' imagination and explain the problems through often unconventional means (once, in order to explain rotating kinematics and Coriolis forces, I took the entire class out to the playground and had them throw tennis balls at each other across a rotating merry-go-round.) After the underlying physics is understood intuitively, the equations merely give shape and form to the understanding and quantify the reality that the students have already understood.

The connection students make between the subject under study and the future that they wish to explore is critical. This exploration has two steps: a mastery of the fundamentals followed by a rich and deep interaction with the implications. I believe that the best way to foster the second component is by using project- and/or case study-based learning.

The key to any project or case study course is that learning becomes an interactive, social, integrated, and constructive process. In addition to learning by “doing,” students develop creativity, context, communication skills, and interdependence on their teammates. Rather than having a single “right” answer, good projects force students to critically evaluate several alternatives and exercise their judgment. Right or wrong, they learn through feedback and interaction with both the instructors and the group members. Project-based learning is interesting and motivating due to the interpersonal dynamics of the team and the requirement that each member effectively communicate their reasons for choosing a particular solution. This effect, coupled with guidance and feedback from an instructor, helps the students articulate their creativity, increase their self-reliance, and demonstrate that the subject that they are learning has, indeed, applications outside of the classroom and to society at large.

Lastly, one of the most important connections that I can make is between my enthusiasm and the nascent enthusiasm of the students. If by association I can inspire, awaken, or reinforce their curiosity and love of learning, they will continue on that trajectory throughout their lives.