

### **A Blockbuster Analogy**

In the 1985 classic film, *Back to the Future*, Marty McFly's ambitious garage band and proficient skateboarding demonstrate that he is a creative and motivated individual. But, his impatience with traditional forms of education earns him 'slacker' status at school. Many students have a little Marty in them, after all Hollywood protagonists are supposed to be relatable. I believe most students just need an enthusiastic leader to focus their wandering attention and spark their creativity. Marty's intellectual flame was ignited by Doctor Emmett Brown, the epitome of a scientist committed to discovery. As a teacher, I draw inspiration from Doc to engage the Marty McFlys of the real world.

#### **Part I: Enthusiasm is Inspiring**

Unlike the detention slip dispensing teachers at school, Marty finds Doc approachable. I approach teaching with an openness that fosters student-teacher interaction. In the minutes leading up to class I engage in casual conversation with my students, show videos and play music to create a welcoming environment. These low-pressure interactions ease the anxiety that can prevent some students from asking questions once class begins. Over time this practice has resulted in increased interaction throughout lectures and also during office hours, via email and around campus. However, approachability alone is not enough. Doc Brown also uses his skills and imagination to engage Marty in fun and unexpected ways. I believe engaging material is easier for students to absorb and is certainly more fun for me to teach. Doc Brown's character from three decades ago is (hopefully for the sake of this analogy) still entertaining enough to remain memorable. While I am committed to ensuring students learn course content, I believe engaging material is easier for students to absorb and is certainly more fun for me to teach. I integrate interactive demonstrations, videos, and humor into each of my lectures. While I cannot compete with a classic summer blockbuster, students appreciate the effort. On several occasions students have admitted that they considered skipping class, but decided not to for fear of missing out on a fun demonstration. All students, like Marty, have the tools and potential to be successful. My extra enthusiasm keeps them coming to class, captures their attention and inspires them to participate.

#### **Part II: Staying Present Takes Teamwork**

At the start of *Back to the Future*, Doc is the knowledgeable mentor and Marty is the naive pupil. This dichotomy is upended when 1985 Marty travels back in time and encounters 1955 Doc. Suddenly, Marty and Doc must work together using their collective skills to return Marty to 1985. The classroom is an ever evolving place and I rely on my students to keep from getting stuck in the past. I am constantly encouraging students to help me improve my courses. For example, during one lecture on color perception a student was curious about animals with more rod & cone types than humans. For the following lecture I researched the question and as a class we learned about the mantis shrimp, an amazing sea creature with fourteen photoreceptor types! I am committed not only to teaching core course materials that serve as foundational knowledge for young scientists, but also to building classes based on the unique and varied interests of the students in them. I also request formal feedback multiple times each semester to ensure students feel exams are fair and I use online, low-stakes quizzes to confirm the class understands key concepts. Learning, like time travel, goes in two directions. I am a resource to my students and my students are also a resource to me. Learning together prevents my course content, teaching style and even pop culture references from getting stuck in the past (I sure would not want to be caught referencing the 80s).

### Part III: Embracing the Future

Doc is at the forefront of technology. He is a great inventor and cannot resist acquiring the latest gadgets of the future. While tricking out a time traveling DeLorean is a great use of technology, I prefer to use it to enhance the learning experience. In my course I utilize powerpoint, videos, and digital course management services. Sometimes, my demonstrations involve technology like watching 3d videos with stereoscopic glasses or experiencing colorblindness with a sodium lamp. In *Back to The Future Part III*, Doc finds himself in the wild west of 1885. There, he learns to embrace a world that is not always plugged in. While I frequently defer to technology's advantages, I also understand the value of unplugging. That is why many of my other demonstrations are technology-free. For example, measuring two-point touch thresholds with paperclips, conducting hearing tests with tuning forks, or using a rubber hand to create an out of body experience. Balancing technology as a tool with hands-on, experiential learning is critical to successfully creating an engaging learning atmosphere.

### Back to the Analogy

As Doc and Marty shared their adventures across time, they grew as individuals. By working together they changed their futures for the better. I have discussed how I draw inspiration from Doc, but my inspiration also comes from my real world mentors and advisors. I discovered my first 'Doc Brown' as an undergraduate. This mentor changed my future by inspiring me with his approachability, enthusiasm, and love of science & technology. This inspiration created my own improved alternative timeline. Now, in the present, I too have the ability to positively affect students. It is my turn to take on Doc's role and inspire others. This opportunity fuels my passion for teaching and my commitment to helping students build their future.