Teaching Statement

Francis Xavier Timmes

Tell me and I forget. Teach me and I remember. Involve me and I learn. – Benjamin Franklin

I’ve been involving students since about 1990. Mainly astronomy, physics, and math. Previous institutional affiliations include UC Santa Cruz, the University of Chicago, and the School of the Art Institute of Chicago. Currently I teach at Arizona State University (ASU) and at the annual MESA Summer School at UC Santa Barbara.

I specialize in large enrollment, online, introductory courses. For example, between 2015 and 2018 I was the instructor for the largest college-credit eligible astronomy course in the world, *Introduction to Solar Systems Astronomy*, offered by ASU and EdX. This experiment ended in 2018 as ASU embarked upon a new, but related, experiment focused on re-entry. Thus, the Earned Admissions version of my solar systems course is heavily enrolled with learners from Starbucks, Uber, and the US military. My other course, *Energy in Everyday Life*, routinely hits 4-figure enrollments.

I subscribe to principles that create a culture of learning around involvement, inquiry, curiosity, and openness to failure. All of my courses are designed and executed with these principles foremost in mind. In my experience, effective learning of science:

★ Excites.
The greatest challenges to learning are disinterest and apathy.

★ Cultivates curiosity.
Activities that nurture a natural curiosity are better than the threat of a test.

★ Is active.
Effective learning is active, not passive. Watching a video is not enough.

★ Is applicable.
Use it or lose it: it is essential to apply what one is learning as one learns it.

★ Is community driven.
A community that inspires and challenges is crucial.

★ Doesn’t discriminate.
Age, race, gender, income, or disability don’t determine what one is capable of learning.

★ Allows for failure.
The best learners allow themselves to make mistakes along their journey.

★ Sparks questions.
The end of a good course isn’t knowing all the answers – it’s knowing what to ask next.

Frank Timmes
Professor, School of Earth and Space Exploration
American Physical Society Fellow
Senior Lead Editor, The American Astronomical Society Journals
Arizona State University, Tempe AZ 85287-1404
Phone: (505) 603-2022 Email: fxtimmes@gmail.edu Web: cococubed.asu.edu