

Teaching Tea Time hosted by Faculty Development committee

Thursday, October 27, 2022

3:30pm-4:30pm Via Zoom

Videos and Education

Professor Bob Stern, University of Texas at Dallas Geosciences Department

The “Net Generation” and “Digital Natives” describe populations that increasingly rely on modern communication technology and are useful characterizations of students today. It is increasingly common for lower division university students to use the internet as their first choice for understanding difficult topics. These students have grown up in an internet-driven world and are accustomed to the availability of videos and animations on virtually any topic imaginable. It is no surprise that students studying Earth processes turn to the internet to aid their understanding of these: subsurface processes, processes that occur over millions of years, processes that occur on the microscopic scale, etc., as such systems are difficult to conceptualize from readings and lectures alone. Similar challenges exist in other STEM disciplines. Videos and animations are powerful aids for explaining Earth systems, and so are well suited for Net Generation student learning. Despite this need and opportunity, high quality (both aesthetically and scientifically) videos/animations on Earth processes, while they do exist, are far fewer than needed. This lack reflects 2 main hurdles involved in creating them. First, the scientific experts (content providers) generally do not possess the technical skills, time, and/or motivation to create high quality video/animations. Second, those who know how to make videos well (technical experts) do not know the systems well enough to explain them – and they are expensive! We need to overcome these hurdles if we are to address the challenges and opportunities presented by the internet and the Net Generation.

This presentation explains the approach we are taking at UT Dallas, which focuses on an elective undergraduate course that trains geoscience majors to make a short (~3 min.) video on a geoscientific topic of their choice. This is active learning! Students who successfully complete the course are invited to join Geoscience Studios (GSS), where they are put to work helping us make more videos, all of which are reviewed and posted on our YouTube channel <https://www.youtube.com/c/UTDGEOSCIENCESTUDIO2021> . With their help, we make an increasingly wide variety of videos. To date, we have created 178 videos. In addition to the student videos mentioned above, these include: 1) the Geonews series, where we explain the science behind a recent geological event in the news, aimed at the general public and lower division undergraduates; 2) Vivid Earth Sciences, a series of 6 videos that explain Plate Tectonics, aimed at a middle school audience; and 3) Plate Tectonic Basics, which are 10-15 min videos that explain key aspects of Plate Tectonics, aimed at upper division undergraduate students. Prof. Stern’s presentations at national scientific meetings are now videos that are posted on our YouTube channel, where they get many more views than at meetings alone. This summer we recorded, edited, and added closed captioning for our first on-line undergraduate course GEOS 2321 Geology, Resources, and Environment of Latin America; these 23 lectures and video syllabus are posted on YouTube and can be found at www.youtube.com/watch?v=kFWp hhJV-gs&list=PLzphDPjNs-iHyuopFCKtdv2TsiP6c5Ozb .