

1077-AE-1777 **John Marshall*** (johnmarshall154@gmail.com), EAPS, MIT, Blg 54, Rm 1526, Cambridge, MA 02138. *Teaching with ‘Weather in a Tank’*.

According to the American Meteorological Society (AMS), roughly 85 universities offer undergraduate degrees in meteorology and/or oceanography in the United States, and the undergraduate meteorology population is rapidly expanding. Laboratory fluid experiments, however, play a minor role in the education of these students. This is in the context of a field of research that is increasingly dominated by large coordinated programs to gather observations, present and manipulate those observations using Web resources, and attempt to simulate them on the computer. We argue here that an educational experience that focuses on fundamentals, and involves the study of idealized laboratory abstractions in the context of real-world data, would greatly aid our students’ understanding and intuition about the dynamics of a fluid on a rotating, differentially heated sphere and how that dynamics helps to shape the climate of the Earth.

In this presentation I will report on the ‘Weather in a Tank’ project in which six universities collaborated to improve the teaching of atmosphere/ocean dynamics using rotating laboratory experiments and real-time data, in the process helping students move more adeptly between theory, models, and observations. (Received September 20, 2011)