

## SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)

## Ignition - Primary Space Education (1)

Author: Dr. Chuck Fidler  
United States, cfidler@wheelock.edu

## PRESERVICE ELEMENTARY TEACHERS' CONCEPTUALIZATION OF COSMIC DIMENSIONS

**Abstract**

The purpose of this qualitative study was to explore undergraduate pre-service elementary teachers' (n= 66) conceptualization of cosmic dimensions (sizes, diameters, distances, orientations, and magnitudes). This research project followed a pretest-posttest quasi experimental design with both treatment and comparison groups. Pre and post interview data were gathered in conjunction with a card sorting exercise designed to gauge how individuals utilize cognitive strategies to develop a personal cosmological description of astronomic dimensions. Results indicated that significant interpretations of astronomical principles were largely influenced by inaccurate perceptions of cosmological dimensions. Participants needed further development of language to conceptualize and communicate accurate mental models of Space. I discuss the implications of these results within the context of undergraduate pre-service elementary teacher preparation.