962-S1-1007 **Anne Brown*** (abrown@iusb.edu), **Michael McDonald** (mickey@oxy.edu) and **Kirk Weller** (wellerk@bethel-in.edu). *Conceptions of Indexing.* Preliminary report.

We will present a preliminary report of a study of mathematics majors' conceptions of indexing in the context of a set theory problem involving an infinite union of power sets. Data was gathered through two sets of interviews with students enrolled in Introduction to Abstract Mathematics courses. A variety of issues were revealed, including incomplete or limited conceptions of infinity, infinite union, the set of natural numbers, and indexing. Further analysis of the data suggests that students' conceptions of indexing appear to be a central issue in their ability to deal with the problem. We use APOS Theory to propose a genetic decomposition of indexing by N. The coordination of the static and dynamic aspects of index is described, as well as the characteristics of an object conception of index. We will illustrate some ways in which students' conceptions of index lead to difficulty, and explain how students' conceptions of infinity, power set, infinite union, and the set of natural numbers come into play in their solutions to the problem. Additional aspects of our analysis, as well as some tentative pedagogical suggestions, will be presented. (Received October 01, 2000)