962-P1-16 **Judith H Morrel*** (jmorrel@butler.edu), Dept. of Mathematics and Actuarial Science, Butler University, 4600 Sunset Avenue, Indianapolis, IN 46208. *Bridge Over the River Abstract: A Course in Mathematical Experimentation.*

This is a report on a pilot course in experimental mathematics, similar to a course taught at Mt. Holyoke, which uses a series of mathematical experiments, each one of which introduces an advanced topic from abstract algebra, analysis or linear algebra. The course attempts to bridge the gap between what students did in high school and freshman mathematics courses and what it is mathematicians really do. Few sophomores have seen the creative, exploratory nature of mathematics. They haven't a clue as to what it means to DO mathematics–to explore mathematical phenomena, to investigate, to be mystified and (hopefully) to understand. As a result, when they are thrust into upper-division abstract mathematics courses, many of them feel lost, with nothing to "grab onto." In the course, teams of students investigated the various topics experimentally, using a computer algebra system or calculator if necessary, made conjectures based on their data, and attempted to justify them through more focused exploration and analysis, completing their work with a "lab" report. This presentation will focus on this course, highlighting what was successful and what wasn't. Included will be samples of projects which were used as well as samples of student work. (Received May 24, 2000)