1003-A1-846   **Kirk E Weller*** (`wellerk@unt.edu`), Department of Mathematics, P.O. Box 311430, University of North Texas, Denton, TX 76203, and **Joanne E Snow** (`jsnow@saintmarys.edu`), Department of Mathematics, Madeleva 213, Saint Mary's College, Notre Dame, IN 46556. *An Exploratory Approach to Analysis.*

In our real analysis courses, we use a laboratory approach to help students learn the fundamental concepts of analysis: limits, supremum and infimum, boundedness, limsup and liminf, continuity, and uniform convergence. In each lab, we ask students to work with many examples, as they formulate definitions, make connections between different concepts, derive conjectures, or complete a sequence of guided tasks. For each lab, students work in small groups and submit a report of their findings. There are 12 labs in all. Several can be done by hand. For others, a computer algebra system such as Maple can be used. We have generally assigned the labs as a precursor to any class discussion or lecture on a given topic.

In our use of the labs we have found that the students are more adept at reading text materials, writing proofs, and developing their understanding of other real analysis concepts. In course evaluations, students report a higher level of course satisfaction and seem generally less intimidated mathematically and more capable of discussing concepts and posing specific questions. In this talk, we will provide a brief overview of all of the labs and describe in detail how we use one of the labs in our courses. (Received September 30, 2004)