1086-H1-549   **David A. Brown*** (`dabrown@ithaca.edu`), Ithaca College, Department of Mathematics, 953 Danby Road, Ithaca, NY 14850. *Experimental Mathematics for the First Year Student.*

As an alternative to the traditional Calculus sequence, the Ithaca College Mathematics Department has been offering an introductory course in experimental mathematics. The course uses computer experimentation in an inquiry-based learning environment to teach students how to generate mathematical conjectures and then support and/or prove those conjectures with reasoning. Students from a wide variety of majors have completed the course and gone on the take further courses to complete a minor in mathematics. The course is also required for the mathematics major. In the six years that the course has been running, we have doubled enrollment and seen an improvement in student writing and communication. These improved abilities have transferred to later mathematics courses, most notably the department's junior level research course sequence.

In this talk, we will present an overview of the course, including its philosophy of experimentation. We will discuss the weekly open-ended "labs" completed by the students and how they are required to write mathematical reports summarizing their experimental results and their associated reasoning. We will provide examples to demonstrate student growth in mathematical understanding and reasoning. (Received September 06, 2012)