1046-Y1-993   **Brynja R Kohler*** (`Brynja.Kohler@usu.edu`), Department of Mathematics and Statistics, 3900 Old Main Hill, Logan, UT 84322, and **Rebecca J Atkins**, **James Haefner** and **James Powell**. *Secret Diffusion Lessons of the Sea Monkeys and Other Math Bio Projects for Undergraduates.*

In this presentation, we provide a description of labs and lessons that can be integrated into a variety of mathematics courses in which students have the opportunity to develop an understanding of the diffusion equation as a model of random motion. The labs require students to collect data on the movement of brine shrimp (a.k.a. Sea-Monkeys), fit parameters, and do a validation study and sensitivity analysis on the model. We have found that involving students in the experimental design and data collection not only helps them build their understanding of the diffusion equation and its solution in an engaging and enjoyable way, but it provides an excellent pedagogical opportunity to bring authentic work of applied mathematics, interdisciplinary collaboration, and modeling to a university course. We will share specific course materials developed for this and other mathematical biology projects designed and tested in undergraduate courses at Utah State University. (Received September 13, 2008)