1135-D1-1951 **Rebecca Sanft*** (bsanft@unca.edu) and **Anne Walter**. *Exploring Mathematical Modeling in Biology Through Case Studies and Experimental Activities.* Preliminary report.

We describe a book project that is a stand-alone compendium of exercises, cases and wet labs designed to help mathematics and life-sciences college students integrate mathematical, computational and research approaches to addressing real problems. The book consists of four units plus supplementary materials for projects and technical notes for laboratory activities, and it is written from the perspectives of a biologist and a mathematician. Each unit begins with a biological background and motivation for the topic, and a mathematical and computational background with embedded R code examples, followed by three case studies across multiple scales and areas of biological inquiry, and a wet lab with opportunities for students to generate their own hypotheses and test them. Each case study and lab is motivated through a biological question, and then guides the students through the steps of model formulation using discrete-time models or differential equation models, parameter estimation, model validation, and analysis. Students see the utility of models for identifying further questions, predicting outcomes, and understanding complex systems. (Received September 25, 2017)