

Approachable Modeling without Calculus · *Erin N. Bodine*

Many scenarios in the life sciences can be modeled with discrete time models which simulate how quantities change over evenly spaced intervals. The construction and analysis of many discrete times models does not require knowledge of calculus, and thus makes them excellent exemplary models in courses where the typical student may not be proficient in calculus. I will present and share materials from a freshman level, undergraduate course I developed for Rhodes College which introduces students to discrete mathematical models of biological processes and the fundamentals of computer programming necessary to simulate those models. Additionally, I will discussion an upcoming collaboration with biologists, through a QUBES faculty mentoring network, to introduce and utilize discrete difference equation models in biology courses.