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Erin Boggess* (erin.boggess@my.simpson.edu) and **Kyle Jensen**
(kyle.jensen@my.simpson.edu). *DNA Hairpin Simulation using the Peyrard-Bishop Model.*

Nanotechnology has opened the door to new and innovative drug delivery methods. One promising route is releasing drugs by selectively opening a capsule latched with a DNA hairpin. We model the dynamics of the DNA hairpin as a bistable system, and predict a melting curve that can be used to manipulate the hairpin between open and closed states. We use numerical simulations to characterize the dynamics of the hairpin molecule in preparation of its future incorporation into a DNA tetrahedron prototype drug delivery capsule. (Received September 16, 2014)