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Kevin B Flores*, Department of Mathematics, Center for Research in Scientific Computation, North Carolina State University, Raleigh, NC 27695. *Statistical validation of continuously structured population models for Daphnia magna.*

Data measurements of biological systems are often indirect and may be limited by clinical or experimental constraints. I will show how dynamic mathematical models can be used to aid interpretation of biological data, focusing specifically on the population dynamics of *Daphnia magna*, an ecologically important organism in the context of toxicology. A concern for environmental hazard assessments is that hazard predictions for population/ecosystems are derived solely from the evaluation of toxicity data at the organism level. I will discuss results from a collaboration with toxicologists at NCSU in which we developed a structured population model that can be used to propagate the assessment of *Daphnia magna* organismal responses, i.e., to environmental change, to the population level, thereby enabling the causal association of organismal responses to ecosystems adversity. (Received September 22, 2015)