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Angela L Peace* (angela.peace@asu.edu) and **Yang Kuang**. *A stoichiometric producer-grazer model incorporating the effects of excess food-nutrient content on consumer dynamics.*

There has been important progress in understanding ecological dynamics through the development of the theory of ecological stoichiometry. For example, modeling under this framework allows food quality to affect consumer dynamics. While the effects of nutrient deficiency on consumer growth are well understood, recent discoveries in ecological stoichiometry suggest that consumer dynamics are not only affected by insufficient food nutrient content (low phosphorus (P): carbon (C) ratio) but also by excess food nutrient content (high P:C). This phenomenon is known as the stoichiometric knife edge, in which animal growth is reduced not only by food with low P content but also by food with high P content, and needs to be incorporated into mathematical models. Here we present Lotka-Volterra type models to investigate the growth response of *Daphnia* to algae of varying P:C ratios capturing the mechanism of the stoichiometric knife edge. (Received September 16, 2013)