1. Predation isn’t stable
   1. Most models of trophic interactions assume that interaction strengths are constant
   2. BUT interaction strengths can vary
      1. Individual level; prey preference; predators interacting with prey differently in different habitats or with ontogeny
      2. This has potential consequences for how predators regulate prey populations
   3. Bob Paine’s work – predators vary in how they interact with prey communities
   4. Across habitats the same predator species can vary in the effects they have on the community
   5. The role of predators can change because of xxxx
   6. Open question: Does asymmetry in body size rations alter the capacity of predators to regulate prey?
   7. This effects the way we thing about regulatory role of predators
      1. We know this from theory… DeLong
   8. In systems where we are concerned with predators regulating prey (ex. Regulation of herbivore populations) body size can… DeLong Theory and empirical evidence
2. More recent empirical work has shown that the absolute body size of predators and prey isn’t the best predictor. It is the relative body sizes of predators and prey
3. More recently studies suggest that the body size ratios, temperature, and habitat type are important predators when you compare across taxa. Hump shaped? What are the consequences: So what if big predators can’t eat big prey? DeLong vs. Kalinkat. Is there a consequence of proportionality between body size ratios and the FR? Doe it reduce the capacity of predators to control prey?
4. These studies that compare across tax offer a prediction of what might be happening for individual interspecific interactions. These general relationships offer an exciting opportunity to predict what happens for a particular predator prey pair. This matters for how we think about the regulatory role of predators.
   1. Based on general theory, we should be able to predict when and where predators will have a strong regulatory role. We should be able to predict predation based on body size.
5. We tested these expectations in kelp ecosystem.
   1. This is really interesting because body size can vary due to recruitment or fishing. And understanding how urchin populations are regulated is crucial for managing urchin hysteresis.
   2. We first describe variation in body size ratios in the Santa Barbara channel. We then conducted a laboratory experiment to determine… And finally, we compared the predicted predation pressure with and without consideration for body-size dependence.