1163-37-507   **Stephanie Dodson*** (`sadodson@ucdavis.edu`), **Briana Abrahms**, **Steven J Bograd**, **Jerome Fiechter** and **Elliott L Hazen**. *Using Agent-Based Models to Understand Drivers of Migration in Northern Pacific Blue Whales.*

In general, both abiotic and biotic factors are thought to influence migratory behavior, but their relative roles are difficult to disentangle. For migratory marine predators, both temperature and prey availability have been shown to be significant predictors of space use, though often physical proxies are relied on due to the lack of data on dynamic prey fields. To evaluate the relative roles of abiotic (sea surface temperature) and biotic (prey availability) factors in driving blue whale (Balaenoptera musculus) movement decisions and migratory behavior in the eastern North Pacific, we developed a spatially explicit agent-based movement model which uses data from a coupled regional ocean model that explicitly includes a dynamic prey model. Our agent-based movement model helps elucidate the mechanisms underlying migration and demonstrates how fine-scale individual decision-making can lead to emergent migratory behavior at the population level. Understanding the drivers of movement, migration and distribution of individuals is important for insight into how species will respond to changing environmental conditions. (Received September 08, 2020)