**Michael Blouin (OSU)**

Title: Mechanisms of rapid adaptation to captivity in steelhead, and possible solutions

It is well established that hatchery culture causes salmonid fish to rapidly adapt to captivity in ways that reduce their lifetime fitness in the wild. This inadvertent domestication makes it difficult for managers to balance producing hatchery fish for harvest versus protecting wild populations. However, it remains unknown what traits are under selection in hatcheries, and if it might be possible to alter rearing conditions to reduce the rate of domestication. Because body size at release from hatcheries is strongly correlated with survival at sea, we hypothesize that variation in behavioral or physiological traits that control growth rate under hatchery conditions are under strong selection. We present data from steelhead that support this hypothesis, which suggests that reducing the variation in size at release from that hatchery could reduce the opportunity for selection. We also present data on attempts to alter the variance in size at release by varying hatchery conditions, and discuss the prospects for using this type of manipulation to produce hatchery fish that are more like wild fish.