Emma is a PhD candidate from the School of Aquatic and Fishery Sciences at the University of Washington in Seattle. She works in the laboratory of Steven Roberts who studies impacts of environmental change on invertebrates at the genomic level, with a focus on species important in aquaculture. Emma’s research is on the effects of ocean acidification on the Pacific oyster, *Crassostrea gigas*. She has studied the effects of ocean acidification on early larval stages of *C. gigas* and is currently investigating how low pH alters the proteomic response in this species.

For more information on her research and previous projects, visit her website: [students.washington.edu/emmats](http://students.washington.edu/emmats%22%20%5Ct%20%22_blank)

Ocean acidification leads to physiological trade-offs in the Pacific oyster, *Crassostrea gigas*

Ocean acidification is occurring worldwide due to increased atmospheric pCO2. The coastal ocean, home to productive fisheries and diverse ecosystems, may see even greater changes in pH due to the plethora of effects caused by close proximity to human influences on the environment (i.e. deforestation, agriculture, mining, increasing population sizes). *Crassostrea gigas* is an estuarine species that inhabits areas prone to episodes of low pH/high pCO2 water along with other environmental fluctuations. We investigated the response of *C. gigas* to ocean acidification within the context of physiological trade-offs.  Oysters were exposed to three different levels of pCO2 for one month (400, 1000 or 2800 µatm; pH 7.9, 7.6 or 7.3).  Potential physiological trade-offs were assessed by measuring the effects of elevated pCO2 on shell micromechanical properties, fatty acid profiles, response to a second stress, and proteomics. The results indicate that *C. gigas* experiences physiological trade-offs after prolonged exposure to ocean acidification to maintain a certain level of homeostasis, but the trade-offs may have detrimental implications for long-term health and survival.