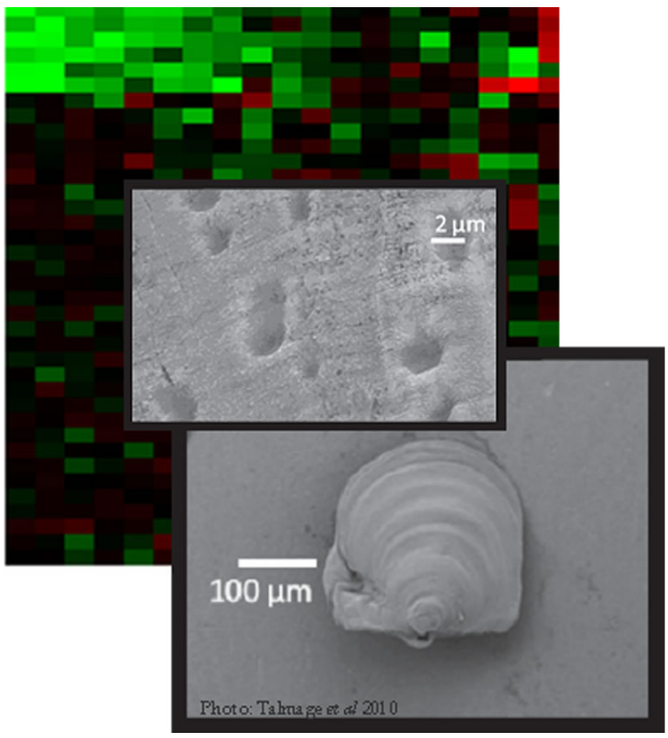
Free Public Lecture

Examining the effect of ocean acidification on larval shellfish using microarrays



Dr. Erin McClelland
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As atmospheric CO_2 has increased, the partial pressure of dissolved carbon dioxide (pCO_2) in the ocean has risen, increasing ocean acidity. These changes are expected to affect many organisms. Consequences to shellfish may include shell malformation, reduced larval growth, decreased hatching success, and lower survival. Small changes in ocean acidity can have a profound effect on the success of the shellfish aquaculture industry. Recently, mass mortality events and abnormal larval development have been reported from shellfish hatcheries and grow-out sites in the Strait of Georgia and Puget Sound. In order to predict the impact of increased pCO_2 on marine organisms, it is important to identify the physiological processes which are affected. Microarrays allow us to monitor expression of thousands of genes and assess environmentally-induced changes. To do this, larvae and spat of Japanese scallops **(***Patinopecten yessoensis***)** and Pacific oysters (*Crassostrea gigas*) were challenged with different levels of pCO_2. Survival, growth, development, and feeding were assessed in response to these effects. Microarrays will be used to identify genes associated with the effects of increased pCO_2. These results can be used help the aquaculture industry develop new hatchery practices and predict the potential impacts of increased pCO_2 on wild populations of shellfish.

Dr. McClelland has a BA in Biology from Occidental College in Los Angeles where she became interested in genetics, and went on to work on the Human Genome Project after graduation. She received an MSc and PhD from the University of Washington in Fisheries where she worked on hatchery/wild interactions in salmon and the consequences of interbreeding on growth in coho. In 2009 she started a postdoc at DFO in the Molecular Genetics Lab, examining the diversity and distribution of MHC genes (a part of the immune system) in sockeye salmon. Recently she has become more interested in using some of the advances in genetic technology to understand how environmental change can affect gene expression and ultimately increase our understanding of evolutionary change.

Wednesday, February 29, 2012
7:00 - 8:00 p.m.
Vancouver Island University, Building 356, Room 109

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