Dynamic modulation of the miR-101/c-fos genetic axis controls cardiomyocyte proliferation and scar tissue resolution in zebrafish heart regeneration

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Thursday, April 30th 2015
12:00-1:00 p.m.

Alfond 304
UNE, Biddeford Campus

Lunch will be provided

Hosted by: Karen Houseknecht, Ph.D.
Sponsored by: COM Biomedical Sciences Department

Megan Beauchemin is a Ph.D. candidate from the Graduate School of Biomedical Sciences at the University of Maine. In late 2011, Megan joined Dr. Voot Yin's laboratory at the MDI Biological Laboratory for her dissertation work elucidating the role of short, non-coding RNAs termed microRNAs, in zebrafish heart regeneration. Megan is originally from Skowhegan, Maine and is an alumnus of the University of New England, earning her Bachelor's degree in Medical Biology in 2008.

Cardiovascular disease is the leading cause of death in the United States due to limited cardiac regenerative capacity in the adult. In response to an acute myocardial infarction, the adult mammalian heart heals with formation of non-contractile collagen scar tissue to replace the necrotic tissue. In contrast, zebrafish display a robust regenerative capacity following cardiac injury, coupling new muscle formation with resolution of scar tissue to restore heart function. The genetic mechanisms that govern regeneration in the zebrafish heart, however, are still poorly understood. In this seminar, Megan will describe her novel findings detailing how fluctuations in microRNA-101 coordinate critical cellular processes during heart regeneration.