Rebecca Bonaiuto,

NSF Graduate Fellow

NSF GK-12 Project: Boston English High School

URL: http://www.gk12.neu.edu

Thesis Title: Chapter 1: Ontogenetic changes in the kinematics of zebrafish prey capture

College/University: Northeastern University

Research Advisor: Donald O'Malley

Degree Sought
Ph.D.

University Department and/or Lab
Department of Biology

Research Focus
I am interested in:

1. Developmental changes in teleost feeding behavior
2. The roles of sensory systems in teleost feeding behavior
3. Feeding behavior in blind Mexican cave fish

Description of Research

I am interested in sensory systems and feeding behavior in two species of fish: zebrafish and blind Mexican cavefish. I use high speed imaging (600 frames per second) to describe the kinematics of fish behaviors and other behavioral techniques to quantify feeding in these fish. More specifically, I hope to define the relative importance of each sensory system (vision, olfaction, lateral line, gustation & audition) to feeding behavior at each developmental stage (larval, juvenile, and adult).

Example of how my research is integrated into my GK-12 experience

I have significant experience in aquatic animal husbandry and plan to incorporate a small aquarium of zebrafish, which is an extraordinarily hardy fish, in the classroom. A number of short experiments will be proposed including: water quality analysis, behavioral observations, observations of zebrafish embryonic development, and observations of feeding behavior.

I also plan to use my expertise in biology to assist students in the creation of exciting science fair projects.