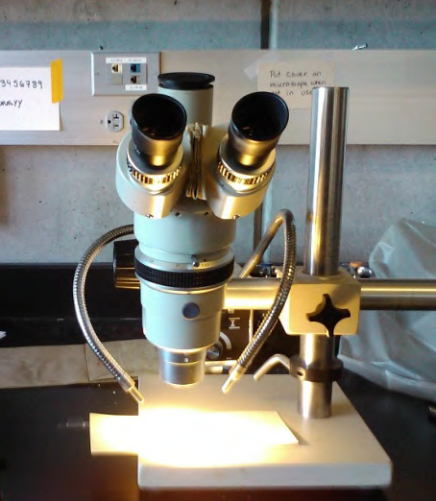
Ecological and Evolutionary Research into the Classroom

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Teacher Edition

Ecological and Evolutionary Research in the Classroom

**Abstract**

Last year during MRL-RET1 I worked in the Mazer lab which is part of the Ecology, Evolution, and Marine Biology Department here at UCSB. The Mazer lab has been studying the effects of climate change on the mating systems of the California wildflower Clarkia. During this time I had an opportunity to experience what takes place in the lab, in the greenhouse and out in the field as they pertained to these studies. In this curriculum project I tried to incorporate both the methods and the concepts that I experienced at the Mazer lab. In the research project I took part in cultivating Clarkia unguiculata from seeds in petri dishes then transplanting the seedlings into potting containers that were then grown in the greenhouse. I have written a two day lab activity that incorporates this experience. In the greenhouse I took part in observing and monitoring the seedlings until they flowered. Then as part of the research into the effects of warmer temperatures on flowering plants we harvested their flower buds and dissected them to count pollen grains and ovules from each. From this experience I wrote another 2 day lab activity. Finally, in the field I experienced how some plants around the country are monitored and how this data is entered into a nationwide data bank, and from this experience I wrote an interesting web based and field based student activity.

**Rationale**

One of the reasons that I decided to take this approach in my curriculum project was that often in my teaching I encounter students that do not believe in science. This is especially true of concepts like global warming and evolution and other concepts that students cannot easily visualize. I feel that teaching student how evidence is gathered and analyzed is of great importance making students more receptive to science based theories and facts. And I saw this as a great opportunity to develop lessons that address this need. Another important reason to take research methodologies into the classroom is that the next generation science standards seem to place more emphasis on inquiry based teaching.

I plan to start these activities as soon as possible integrating them into my ecology and evolution units. I believe the sooner one starts with the germination process the better the chances are that the flower buds will be available for dissecting. The first two activities have been planned as an ongoing project using Clarkia if however Clarkia flowers are not available the labs can be done as stand-alone lab and using any kind of seed or flower buds.