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The Great Larva Race: Using Fruit Fly Larval Speed to Study Quantitative Genetics

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In 2012, ABLE member Kathy Nolan presented a mini-workshop about measuring the speed of the larval stage of the commonly used fruit fly, *Drosophila melanogaster*. Based on these techniques, I designed a semester-long module that uses this trait to study quantitative genetics. Students begin by measuring the average larval speed from a genetically variable line of *Drosophila melanogaster*, and then select for both fast and slow larval speed over several generations of flies. Halfway through the semester, the high- and low-speed lines are crossed and the progeny's speed is quantified. The class data is used to calculate heritability and response to selection. The final exercise is an end-of-semester race amongst each lab group's fastest line to determine a winner of extra credit. This module can serve as a more interesting alternative to classic quantitative genetics studies such using bristle hair counts or modern computer simulations. The results of the inaugural semester of this module did suggest genetic heritability of the trait as well as identified improvements and variations of the exercise.

Mission, Review Process & Disclaimer

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