

Overcoming Challenges to Creating Large Enrollment Inquiry Based Introductory Labs

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Transitioning a traditional introductory biology lab to an inquiry-based lab can be challenging, but doing so in a large enrollment lab (~1500 students/year) with a limited budget can be daunting. We will present some of the key issues that we faced in the design of labs that (1) could be completed in three hours with up to 24 students, (2) involved the application of key concepts in an experimental format, (3) promoted critical thinking skills, (4) contained some scientific writing component weekly and (5) were not cost prohibitive. As our labs are taught by TAs or adjuncts we had the additional the challenge of implementing labs that were occasionally outside the TAs/adjuncts area of comfort/expertise. Rather than revamp the labs completely we have used a slower approach that allows our labs to evolve as our student population changes over time. We will share how we addressed some of the issues we faced through the design of online materials to help to prepare students for the labs, to work students through the components of writing a basic research paper and summaries of experimental results, to help create consistency across multiple lab sections, and to lighten the workload of the TAs/adjuncts. In addition, a discussion and demonstration of how we used simple and inexpensive materials to enable students to design group and individual experiments, to test samples experimental samples and analyze the resulting data, and to foster basic laboratory skills will be included.

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