

Converting the Labs in an Introductory Biology Course from Cook-book to Investigative

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Abstract

The recent trend in science education circles to encourage inquiry-based teaching in both lecture and laboratories has led to a flurry of “inquiry-based” laboratories. A quick look at these “inquiry” or “problem-based” laboratories reveals a wide range in the quality of and approaches to the curriculum. While the National Science Education Standards provide a framework for what should be included in laboratories, they do not include a blueprint for designing inquiry-based labs. During this session, we will describe how we designed 14 inquiry-based laboratories that can be completed in one laboratory session. Included will be discussion of the design criteria behind the labs, the laboratory manual, the pre-laboratory exercises, the laboratory exercises, and the student assessment procedures. The audience will have the opportunity to perform one of the laboratory investigations and discuss strategies for conducting the lab and assessing student performance. We will also take time to work with participants in planning how they might convert a favorite lab of their own.