Adopt and Adapt: Pat’s First Principle: Never Reinvent the Wheel---unless you can make it better!

Many faculty think that adopting PBL, Cases or Problem Spaces is too time consuming. At workshops the first question is usually, “how do I find the time to write new cases or design new problem spaces that really engage the learners”.

Finding Problems, Cases and Problem Spaces
Although there are many websites that have cases on science topics appropriate for undergraduate education, there are fewer that incorporate quantitative concepts, datasets, mathematics and statistics. It helps to have particular concepts, objectives and course topics in mind. Remember you can always make a case more or less difficult or complex, so don’t hesitate to find ideas originally developed for another level of education. We suggest the following sources for finding cases that you might make more quantitative by adding data analysis and mathematical and statistical concepts:

CASES Online
a searchable/downloadable database of cases for K-12, undergraduate, and graduate science education (includes PRISM Program cases)
Emory College Center for Science Education, Emory University
http://www.cse.emory.edu/cases/

Problem-Based Learning Clearinghouse
"a collection of problems and articles to assist educators in using problem-based learning"
University of Delaware
[requires free registration]
http://www.udel.edu/pbl/others.html

The National Center for Case Study Teaching in Science
State University of New York at Buffalo
http://ublib.buffalo.edu/libraries/projects/cases/case.html
http://ublib.buffalo.edu/libraries/projects/cases/ubcase.htm

LifeLines Online
"Accessible Investigative Case-Based Biology"
Southeast Missouri State University and BioQUEST at Beloit College
http://bioquest.org/lifelines/emory/
http://www.bioquest.org/
http://serc.carleton.edu/introgeo/icbl/index.html
PRISM Problems and Research Integrating Science and Math
http://www.cse.emory.edu/prism/resources/
Although this site features cases for K12 educators, many can be adapted up to college level by adding to the objectives and changing assignments.

For more mathematical and informatics based sites,

BEDROCK
(Bioinformatics Education Dissemination: Reaching Out, Connecting, and Knitting-together) is an NSF-funded project aimed at integrating bioinformatics throughout the undergraduate biology curriculum, using an inquiry-based approach in which students explore and analyze actual data in a way that recreates the experience of conducting research. There are over 150 participant projects as well as a number of problem spaces.
http://bioquest.org/bedrock/

ESTEEM
Excel Simulations and Tools for Exploratory Experiential Mathematics
Over 60 modules that relate to the mathematics behind biology.
http://bioquest.org/esteem/
http://bioquest.org/esteem/esteem_result.php

Project-Based Instruction in Mathematics
A number of project based algebra and statistics projects.
http://faculty.uscupstate.edu/mulmer/PBI_Index.shtml

Oral History
https://www.kentuckyoralhistory.org/