

# PROBLEM-BASED LEARNING (PBL)

University of Delaware

- In the PBL pedagogical approach, student learning is motivated using a problem, puzzle, or complex scenario presented in the same context as it would be in real life, with little information not provided at the start.
- Students organize their ideas and existing knowledge, attempting to define the broad nature of the problem, brainstorming initial hypotheses, identifying missing information to fill in conceptual “holes.”
- PBL is a cyclical process of learning; students continue to define and work through the problem, reconvening to share what they are learning from researching and experimenting, ideally integrating their new knowledge and skills into the context of solving the problem.
- The PBL approach provides a forum for students to hone their ability to think critically, find and process new information, communicate effectively, and become influential members of productive teams.
- The primary role of an instructor is to facilitate group process and learning—not to provide easy answers. By relinquishing the control of answers, instructors are able to learn with students, and they often find renewed interest and excitement in teaching.



## ABOUT PBL

Pioneered at the University of Delaware in the early 1990's, the PBL pedagogical approach has continued to evolve in ways that influence how learning happens and how spaces for learning are planned on that campus.

Why PBL? *Learning begins with a problem.*

Planning for a new interdisciplinary science and engineering at U Delaware built on their established PBL environment, recognizing the significant opportunity to have new physical spaces in which to focus on the many dimensions of problem solving—as it is learned and practiced.

The vision of planners (see logo below) was realized in laboratory spaces that support PBL strategies, enable the integration of intro biology and chemistry and other disciplines, and an expanded learning team of students, faculty, and preceptors. The full teaching team, through close interactions with their students, is able to promote experimental design, data analysis, visualization, and presentations of scientific investigations.

The vision of integrated, inclusive learning and learning environments is realized also in the visible connections between learning laboratories and PBL classroom. The collaborations among faculty, administration and staff required to realize the Interdisciplinary Science Learning Center significantly contributes to the sustainability of PBL at the University of Delaware.



### RESEARCH & RESOURCES

- <http://www1.udel.edu/inst/>

