

Using Problem-Based Learning in Sustainable Technologies to Increase the STEM Pipeline

Description

Today's energy and climate concerns have captivated a new generation of students who have fervently embraced the cause of clean renewable energy and environmental sustainability. In this presentation, you will learn how problem-based learning (PBL) is being used to increase the STEM pipeline by tapping into students' passion for clean renewable energy while at the same time developing their problem solving and critical thinking skills.

Presentation Plan

In this interactive session, you will learn the principles of PBL by actively participating in a multimedia PBL Challenge and solving an authentic real-world problem focused on sustainable technology. Using a collaborative team-based approach, you will learn how to incorporate PBL into your own classrooms using online multimedia instructional materials developed through the National Science Foundation Advanced Technological Education (NSF-ATE) funded *STEM PBL* and *PHOTON PBL* projects of the New England Board of Higher Education. Effective implementation and assessment strategies will be discussed as well as alignment to National Science Education Standards. Each participant will be provided with special access to a comprehensive series of online instructional resources that include classroom-tested multimedia PBL Challenges developed currently used in high school and college STEM courses across the U.S.

Summary of Experiences in Conducting Presentations (partial list)

- October 2009 **STEM PBL: Problem Based Learning in Sustainable Technologies** – Workshop presented at the NSF/American Association of Community Colleges (AACC) Annual Conference, Washington, DC.
- October 2008 **Assessment of Student Learning in Problem-Based Learning** - Workshop presented at the NSF/American Association of Community Colleges (AACC) Annual Conference, Washington, DC.
- May 2008 **Problem-Based Learning as a Teaching Strategy for the Innovation and Emerging Technologies Workforce** - Presentation at the National Association for Workforce Improvement Annual Conference, Burlington, VT.
- March 2008 **Focusing like a laser beam on photonics problems** - Workshop presented at the National Science Teachers Association Conference, Boston, MA.
- October 2007 **Photon PBL: Problem Based Learning in Photonics Technology Education** - Workshop presented at the NSF/American Association of Community Colleges (AACC) Annual Conference, Washington, DC.
- June 2007 **Applied Learning Theory in Technology Education** - Invited workshop presented at the Three Rivers Community College School of Engineering Technology Professional Development Day.
- June 2006 **The Role of Learning Styles in Adaptive Learning** - Workshop presented at the SAME-TEC 2006 Annual Conference, Albuquerque, NM.
- June 2005 **Applying Learning Theory to Instruction** - Workshop presented at the SAME-TEC 2005 Annual Conference, San Jose, CA.