

VII.8 Hydrogen Technology and Energy Curriculum (New Project)

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Subcontractors:

Schatz Energy Research Center (SERC) at Humboldt State University, Arcata, CA

Chabot Space and Science Center (CSSC), Oakland, CA

National Hydrogen Association, Washington, DC

Collaborators:

Alameda-Contra Costa Transit, Oakland, CA

Lab-Aids, Inc., Ronkonkoma, NY

Objectives

- Develop, field test in national centers, revise, publish, and disseminate three curriculum modules and integrate hydrogen and fuel cells into existing Lawrence Hall of Science (LHS) high school materials.
- Develop and implement a professional development plan for the curriculum materials.
- Develop a model for collaboration among school districts, informal science centers (such as LHS and CSSC), university scientists (SERC) and local transportation agencies (AC Transit) to deliver exciting, up-to-date, rigorous curriculum and instruction to high school students and professional development to their teachers.
- Disseminate the materials to reach a broad national audience of teachers and students.
- Evaluate the quality and effectiveness with teachers and students of the curriculum materials, professional development strategies, and collaborative model.

Technical Barriers

This project addresses the following technical barriers from the Education section of the Hydrogen, Fuel Cells and Infrastructure Technologies Program Multi-Year Research, Development and Demonstration Plan:

- A. Lack of Awareness
- C. Institutional Barriers and Access to Audiences
- D. Regional Differences

Approach

Year One: First Draft and Trial of Materials

LHS, SERC, and three teacher associates plan to collaborate to create an outline of each module. The outlines will include specific learning goals and a brief description of each activity in the module. These outlines will be reviewed by a larger advisory group and revised if necessary. One of the outlines will be further developed into a draft module and prototype kit materials.

Developers will trial test the module in San Francisco Bay Area classrooms in school districts such as Berkeley, Oakland, Mount Diablo, San Leandro, and West Contra Costa. These districts serve diverse student populations and include low- and high-performing schools as based on the California Academic Performance Index. Teacher comments and observations by project staff will be gathered for use in revision of the materials. These trials will be carried out in conjunction with outreach visits planned and coordinated by AC Transit, LHS, CSSC, and SERC.

(Note: Subject to congressional appropriations, work on this project is anticipated to begin in FY 2005.)