

# Encouraging Healthy Behavior through Environmental Conservation Awareness: A Pilot Study in Economically Disadvantaged Communities

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## Background and Aims

A deeper understanding of the connections between healthy behaviors, disease prevention and conservation of our natural environment can increase motivational social change and improve health.

We seek to enhance healthy behaviors of youth in underserved populations by incorporating health prevention into an environmental conservation framework of social responsibility. We will use a "mixed stealth" approach, providing school-based environmental and health education to ethnically diverse and underserved middle schools in our community.

## Project Description

### Four Components of School-Based Intervention:

- 1. Health Education:**
  - Using previously validated web-based modules on nutrition and physical activity.
- 2. Environmental Sustainability Education:**
  - Newly developed educational module.
  - Docent led experiential learning field trip to Jasper Ridge Biological Preserve.
- 3. Stanford Students Learning and Leadership:**
  - Undergraduate students engage in service learning coursework and activities to: a) develop environmental education materials for middle school students, b) provide classroom support to science teacher during dissemination of web-based modules, c) act as peer mentors of 6<sup>th</sup> grade students, d) lead reflections and concept mapping activities with 6<sup>th</sup> grade students of participating schools.
- 4. Parent Engagement:**
  - Educational session for parents to emphasize connections between environment-health-behavior change and enhance family collective learning.



Jasper Ridge Biological Preserve, Stanford University

## Methodology

This study is designed as a quasi-experimental comparison where students in a demonstration school will receive the full intervention and students in a comparison school (matched for demographics) will receive only pre and post test questionnaires. Details of the comparative analysis are shown in the table below.

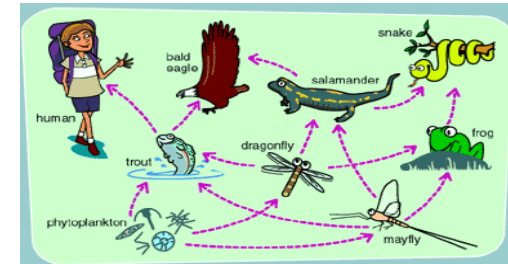
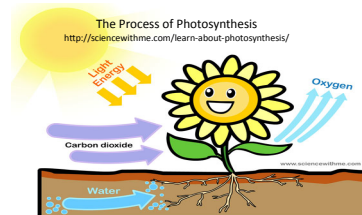
Hoover Community School, Redwood City Demonstration School	Kennedy Middle School, Redwood City Comparison School
<b>Sample:</b> 87 sixth grade students	<b>Sample:</b> 82 sixth grade students
<b>Demographics*:</b> <ul style="list-style-type: none"> <li>Hispanic or Latino 95%</li> <li>Free or reduced meals 42%</li> </ul>	<b>Demographics*:</b> <ul style="list-style-type: none"> <li>Hispanic or Latino 81%</li> <li>Free or reduced meals 77%</li> </ul>
<b>Pretests:</b> knowledge and behavior on topics of nutrition, physical activity and environment	<b>Pretests:</b> knowledge and behavior on topics of nutrition, physical activity and environment
<b>INTERVENTION</b>	
<ul style="list-style-type: none"> <li>Web-based health education modules on nutrition, physical activity and environment</li> <li>Service learning training of Stanford students</li> <li>Peer mentoring of 6<sup>th</sup> graders by Stanford undergraduate students</li> <li>Pre test of environmental concept map</li> </ul>	
<b>Parent education session</b> on environmental conservation and health	
Docent led <b>experiential environmental</b> conservation session in Jasper Ridge Biological Preserve	
<b>Post-tests:</b> knowledge and behavior on topics of nutrition, physical activity and environment	<b>Post-tests:</b> knowledge and behavior on nutrition, physical activity and environment
<b>Post test</b> of environmental concept map Stanford student led post reflections of education materials and field trip	<b>Dissemination/Sharing</b> of web-based educational modules, and correct answers of knowledge test with students and teachers.

\*Source: Student Ed Data, <http://data.k12.ca.us/>

## Ongoing Activities/Process Outcomes

**Winter-Spring 2014:** Environmental educational video was developed by undergraduate students engaged in service learning. Educational materials and pre-post survey instruments were developed and successfully pilot tested with a group of 30 6<sup>th</sup> grade students. The diagrams below are examples of such educational materials.

**Fall 2014:** Implementation is ongoing in both demonstration and comparison schools. Final student reflections are scheduled for the first week of November.



Food web and human interaction  
[http://www.epa.gov/acidrain/education/site\\_students/foodweb.html](http://www.epa.gov/acidrain/education/site_students/foodweb.html)

## Future Implications

### Sustainability

- This model has the potential to foster positive health behaviors. By becoming agents of change and advocates of environmental conservation, youth could eagerly engage in healthy behavior.

### Plans for Continued Development

- Dissemination of web-based tools.
- Establishment of a formal Human Biology service learning course to continue engagement of Stanford students in providing the program to underserved schools.
- Exploring funding and feasibility for replicating the model at a larger scale.
- The HealthyU curriculum is available online for educational purposes (<http://healthyu.stanford.edu>). The environmental educational component will be added by the end of the project.

## Community Partners

Hoover Community School and Kennedy Middle School, Redwood City School District (RCSD).

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