

# ENGAGING YOUTH IN REDUCING EVERYDAY EXPOSURES TO ENDOCRINE-DISRUPTING CHEMICALS

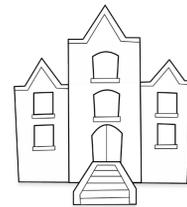
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## Purpose and Overview

- As widespread hormonally-active pollutants may pose particular risk during critical windows of development, interventions to reduce risk should actively engage youth.
- Silent Spring and the Massachusetts Breast Cancer Coalition developed a hands-on high school curriculum to improve health literacy and reduce student exposures.
- The curriculum integrates BCERP concepts, such as endocrine disrupting chemicals (EDCs) and windows of susceptibility.
- We have partnered with 6 schools across Massachusetts and will reach at least 275 students.

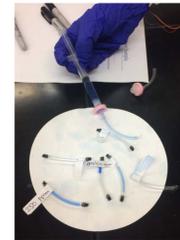


## Testing of Household Tap Water

- Students learn about common water contaminants, including EDCs, and their health effects.
- Students evaluate drinking water reports.
- Students analyze their household tap water, including testing for lead and chlorine, and treat wastewater.



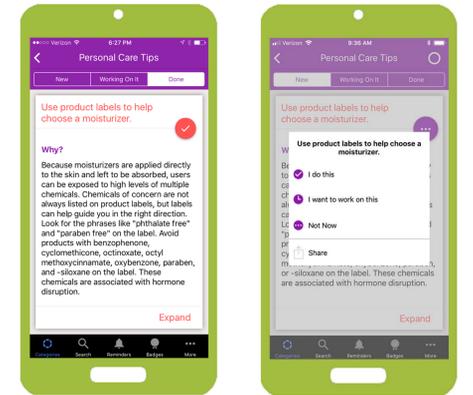
Students treat synthetic wastewater (a water solution prepared with textile dye and sodium sulfate to mimic wastewater from the textile industry) and evaluate the efficiency of their treatment.



## Environmental Health App



- Students reduce exposures using Silent Spring's free smartphone app Detox Me.
- The app guides users through 270 research-based recommendations and tracks shifts in health-related behaviors.
- The app is available in English and Spanish on Android and iOS phones.



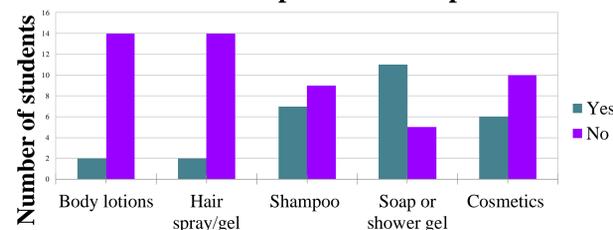
Students select 10 app tips and track adoption success over 2 weeks.

## Product Use and Behavior Survey

- Students implement take-home surveys that help them analyze exposure trends for chemicals in household and personal care products.

Chemical Class	Example of Household Survey Question
Phthalates	Is there a bathroom in your house with a vinyl shower curtain?
Highly Fluorinated Chemicals	How often did you eat microwaveable popcorn this month?
Fragrances	How many bathroom products do you typically use each day that have fragrance or 'parfum' listed as an ingredients?
Pesticides	Does your household use weed killers or similar lawn care products?
Parabens	Do any of the following groups of products you use at least once daily contain the word 'paraben' in the ingredient list?
Healthy Behaviors	Chemicals from outside can be tracked indoors on the soles of shoes. Do you take off your shoes when you come home?

### Students who use products with parabens



Students graph survey data and write a report about their common exposures.

## Peer-to-Peer Mentors



- Massachusetts students are connected to youth who have participated in biomonitoring research, including UC-Berkeley's HERMOSA and COSECHA studies.



COSECHA youth researchers working for UC-Berkeley's CERCH. Youth researchers will explain study results to MA-based youth.

- Mentors share study results, highlight steps they took to successfully reduce community exposures, and answer students' questions.



Youth mentors are video streamed into Massachusetts classrooms.

## Evaluation Methods

- Number and diversity of students that complete curriculum and download app
- App analytics tracking usage and changes in health-related behaviors
- Changes in attitudes, knowledge, and behavior through pre-and post-tests
- The level of interaction between high school classrooms and peer mentors
- Grade/narrative assessments of worksheets and final written reports

## Discussion

The program:

- Enhances hands-on learning in science classrooms.
- Helps youth adopt precautionary actions.
- Has components that are available digitally and can be used by other BCERP sites.



Youth take home BCERP materials for families.

## Acknowledgments

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