

## STEM PROGRAMS

### What to expect:

- ½ day or full day field trip
- A tour of the facility
- Background lessons on wetland ecology and water quality
- Active, hands-on science experience for your students



**Students become scientists** as they work in small groups to test their

hypothesis. Using professional grade equipment, students will collect pH, nutrient level, turbidity, dissolved oxygen and temperature data from different stages of the treatment process. A microscope lab will allow students to get up close and personal with some of the local residents—plants, fish, shrimp, rotifers, ciliates, worms, algae and more!

We will reconvene to interpret the data collected by the students. Does their data support their predictions?



## OUR FIELD SITES

### The Green Machine

**Our headquarters and most popular facility;** The Green Machine is a self contained wastewater treatment facility located in beautiful Makiki Valley



Recreational area in Honolulu. It recycles wastewater from the adjacent Hawaii Nature Center

and uses it to irrigate nearby fields. Makiki Stream allows students the opportunity to compare water samples from the Green Machine to fresh stream water.

### The Ala Wai Restorer™

**The Ala Wai canal provides drainage for many of Honolulu's streams,** and also their polluting runoff. Here we have floating rafts



called restorers that provide habitat for plants, animals and micro-organisms to help treat and clean a portion of this water.

### Kapolei Slaughterhouse

**In Campbell Industrial Park, a restorer lagoon™ provides treatment for wastewater** from a Slaughterhouse. A great example of industrial sustainability

## WHAT DO I NEED TO KNOW?

### Who can participate?

**Programs are designed for 5<sup>th</sup> -12<sup>th</sup> graders** in the State of Hawaii. All programs are tailored to be fun, challenging and age appropriate depending on the participants. Capacity for programs is approximately 30 students.

### Cost

**All programs are FREE** thanks to generous grant from United States Department of Education. We are unable to provide transportation and you must arrange your own.

### We are here to serve you!

**Our programs are flexible** and are here for **teachers**. If you have any curricular or special needs, let us know! Service Learning opportunities are also available.



### Registration

Programs are available year round. To schedule a trip or for more information, please contact:

**Mollie Caka**  
Assistant Program Manager,  
STEM Scholars  
(808) 673-0214  
mcaka@pidfoundation.org  
pidfoundation.org/programs/  
greenmachine

## CONTENT AND PERFORMANCE STANDARDS

**STEM Scholars programs are aligned with Hawaii Content and Performance Standards.**

### Science

**Have our program help fulfill the Scientific Process Strand.** Your students will use the scientific method to ask questions, make hypothesis and collect and analyze data. Our living laboratories allow students to explore and discover.



### Math

**Give your students real world math experience** covering the Strands of Measurement and Data Analysis, Statistics and Probability. Students use scientific instruments to measure variables and analyze their data for trends to relate to their hypothesis.

**Grade level benchmarks are available upon request.**



**Partners in  
Development  
STEM Scholars  
Program**



**Partners in Development  
STEM Scholars  
Program**



## HANDS-ON SCIENCE AND SUSTAINABILITY PROGRAMS FOR 5TH-12TH GRADE

STEM Scholars  
2131 Makiki Hts Dr  
Honolulu Hi 96822  
Phone (808) 673-0214

Partners in Development Foundation...

STEM Scholars  
2131 Makiki Hts Dr  
Honolulu Hi 96822  
Phone (808) 673-0214



...Preparing communities for success...

*Hei ho'omōhala me ka huaka'i*  
Partners in Development *foundation* Preparing communities for success and service

### Our Mission...

**STEM Scholars mission is to positively impact Hawaii's students in the content areas of Science, Technology, Engineering and Math.** Using the Hawaiian value of malama 'aina as a guiding principle, and Wetland Technology as a platform, we seek to make students stewards and scholars of our island home.



### Our Programs...

#### Our inquiry-based science field trips are:

- Hands-on
- Individually adapted to your needs
- Authentic
- HCPS based
- Fun

#### Students will:

- Formulate hypotheses
- Use professional water quality equipment
- Collect and analyze data

### Our Platform...

**All of our programs are based around sustainable and eco-friendly alternatives to traditional waste water treatment and remediation.** At each of our three sites, constructed wetland technology utilizes biology and ecology to clean and treat waste water.

By utilizing the organic pollution in wastewater as food—organisms create a thriving aquatic ecosystem., The useful by-product is clean water with



low levels of dissolved nutrients and pathogenic bacteria that is certified by the state of Hawaii to R-2 reuse standards.