

From: Art Kimura <art@higp.hawaii.edu>
Subject: **toothbrush micro robot workshop for teachers on Oahu**
Date: April 16, 2009 10:53:27 AM HST
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Waiakea High School's Robotics Club (in partnership with the Business Academy), <http://www.waiakearobotics.com/>, has received a significant grant from the Thirty Meter Telescope Project (Cal Tech University) to extend their award winning micro robot program in Hawaii. The micro robot program, in which the team of students build one cubic inch and one cubic centimeter robots and compete in an international tournament in Nagoya each fall, is for high school and university level students (http://imd.eng.kagawa-u.ac.jp/maze/index_e.html). As far as we know, Waiakea is the only high school in the U.S. that has such a program.

The Waiakea High Robotics Club students and mentors have come up with a fun, easy to build and inexpensive, micro robot for elementary, middle and high school teachers and students using a toothbrush head, a cell phone vibrator motor and a battery. These can be used in a classroom setting, for outreach programs for younger students, for fund raising, and for parent/child family engagement opportunities as well as after school enrichment programs.

You and teachers from your school are invited to a Toothbrush micro robot workshop to be held:

when: May 9, 2009, Saturday (pre registration required, limited enrollment for each session)
session I: 9:00 a.m.-11:30 a.m.
session II: 12:30 p.m.-3:00 p.m.

location: Pearl City Elementary School cafeteria (mahalo to Principal, Dr. Susan Hirokane, and the NASA Explorer School and team)

what to bring: 1 AAA alkaline battery, 1 small/sharp scissors (all other materials will be provided)

instructor: Dale Olive, Waiakea High School
sponsor: Hawaii Space Grant Consortium, University of Hawaii

what: introduction to micro robots (what the outcomes for students are and have been), design, build and take home your own toothbrush micro robot (and compete in a toothbrush robot race and jousting tournament); information on ordering the components will also be discussed.

why: applies abstract science concepts into concrete applications (inquiry, center of gravity, torque/force, etc.), catalyst for engaging students in STEM, pipeline into other robotics and STEM activities

optional: eligible to participate in tournament: the 1st annual TMT Toothbrush Micro Robot Tournament to be held at the Imiloa Astronomy Center on October 10, 2009; the game challenges are being developed and will be announced in August.

Toothbrush robots have been around since 2007, credited to the Evil Mad Scientist Laboratories (see video and how to make it at <http://www.evilmadscientist.com/article.php/bristlebot>). However, Waiakea High has come up with an even less complicated way of making them and not have to rely on coin batteries but using the less expensive and more available, AAA batteries (or even showing you how to take apart a 9V battery to obtain 6 AAAA batteries).

Please let teachers at your school know of this opportunity to help to continue to build the STEM pipeline through this fun and engaging activity.

Teachers interested should email me (art@higp.hawaii.edu) to register, indicating school name, grade level, and morning or afternoon session choice; there will be limited enrollment. If there are any questions, please let me know. art

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