

A STEM PROGRAM

SMILE

Science and Math Investigative
Learning Experiences

Newsletter
Volume 29, No 2. March 2023

*29 Years of Service **

**What was your
favorite part of the
SMILE Program?**



**"Working together,
meeting new people.
And the Challenge
was fun and
engaging/hands-on."**

HIGH SCHOOL ENGINEERING CHALLENGE



SMILE high school students from six RI school districts came to URI to work in teams that acted as and learned about Civil Engineers, Ocean Engineers, and Electrical Engineers for this engineering challenge. Students were divided into 14 Teams, and each team was further split into two groups. Group A completed a challenge to build and test a drone using a programmed Arduino uno, wired to a breadboard, to which they attached sensors and a battery. Group B designed and built a scale offshore wind turbine jacket structure 24 inches high with 3, 4, or 5 bays with supporting crossbars that was tested on a shake table for its ability to withstand earthquakes up to magnitude 3. Dr. George Tsiatis, URI Professor of Civil Engineering, was in charge of the jacket testing using the shake table. Each team presented their jacket structure results on the most effective combination of materials to protect the off shore wind turbine in the event of an earthquake.



HIGH SCHOOL ENGINEERING CHALLENGE

Dr. Matt Wei, URI Professor from the Graduate School of Oceanography, whose NSF grant sponsored this Engineering Challenge, and his graduate students held breakout sessions for the SMILE students involving a seismograph to detect vibrations from students jumping to simulate earthquake detections. They also showed students 3D printed models of earthquake zones and discussed what causes earthquakes. Students gained important knowledge about earthquakes, jacket structure stability and the use of electronic sensors and a microprocessor to enable drones to fly in a controlled setting.



"Working with friends and sharing ideas."



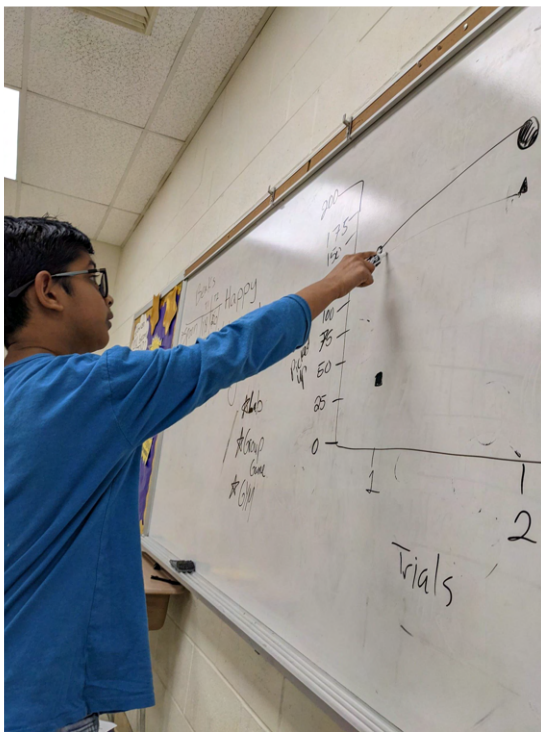
"My favorite part was working with my team, it was so much fun to work with new students."



CLUB UPDATES

CITIZENS ELEMENTARY SCHOOL Woonsocket Kirby Greene By Citizens SMILE Club

Students are currently learning about adaptations. We have conducted multiple activities and labs that focus on the different types of adaptations in both plants and animals. Students have had fun studying how finches adapted to the Galapagos Islands. They were challenged to create a game based around adaptations and survival of the fittest.



CLUB UPDATES

ELLA RISK ELEMENTARY SCHOOL Central Falls

Shena Tremblay, Laticia Biggerstaff

By Ella Risk SMILE Club

At Ella Risk we host a SMILE club for fourth and fifth grader students . We have had a fun year participating in the SMILE program and weekly activities. During the first session of SMILE our students ranked Saving Fred, Soaring Satellites and Cartesian Divers as their top three projects. As we prepare for our family science night these are some of the experiments that we hope to share with our families. Our group is excited to participate and show off all the things we have learned from the first session.

Our second session has been focused around hydroponics. Our group was very skeptical about the ability of seeds to germinate on cotton balls. After watching our seeds sprout and grow our students were excited and invested in the growth of our lettuce. When discussing upcoming units students have expressed interest and excitement for the dissection of owl pellets, but most of all they are looking forward to our ecology day at URI.

As we begin to plan for the end of the year we are starting to brainstorm ideas for our stewardship project. Our club is hoping to create a stewardship project that improves our school community. We hope to end this year with a project that can add beauty and life to our environment.



CLUB UPDATES

CURTIS CORNER MIDDLE SCHOOL South Kingstown

Valerie Light, Anna Stuart-Viera
By Curtis Corner SMILE Club

Curtis Corner Middle School SMILE club in South Kingstown has been very busy this year! We had a wonderful time on our trip to Roger Williams Botanical Gardens learning about the flora that grows all year long inside the greenhouses. A game depicting the ecological interactions between flora and fauna engaged all the students! In December we had a special wreath making event before the holidays using flora from the woods around South Kingstown. Our group is looking forward to our Engineering Challenge at URI on March 31!



CLUB UPDATES

THOMPSON MIDDLE SCHOOL Newport

Candice Lewia
By Thompson SMILE Club



Every Wednesday the TMS SMILE club meets to complete an interesting and fun challenge. These challenges require students to use the engineering design process to figure out solutions to real world problems. For instance, one of our first tasks was to create a paper airplane. By changing variables such as size, weight, and design students were able to determine what characteristics enabled the plane to fly the furthest distance. Other examples of challenges included creating Mars lunar landers, wind vehicles, and hovercrafts. Other activities were designed to help prepare students for the URI challenge day. Some of these projects included creating several different types of wind turbines and learning about motors and different forms of energy. Overall, it is exciting to see how, when given the same criteria and materials, all groups designed and created products that were all very different and innovative. TMS students were also lucky to attend a field trip to URI's Bay Campus in the fall. What an awesome experience for the students as they were able to interact with graduate students and scientists in order to learn about Narragansett Bay and the organisms that live within. As you can see, Thompson SMILE students have been keeping busy!



CLUB UPDATES

WESTERLY HIGH SCHOOL Westerly Lesley Fastovsky By Westerly SMILE Club

The SMILE Engineering challenge took place on March 10th this year. And what a challenge it was! Students had to tackle two projects - a scaffold for a wind turbine and a drone - both made from popsicle sticks. Both projects had potential pitfalls. "The drone was easier to build! It had more instructions," said one of the tower builders. "Well you didn't have to deal with the bread board," said a drone builder. In the end, though, students felt accomplished and forgot all the issues. Mentors and teachers, alike, were impressed with how well the students presented their thought processes. The whole room shared each group's struggles and successes as they demonstrated the drones' flight or the strength of the structures on the shake table.



Most of all, students really enjoyed working with other SMILE members from other schools. Many of the adults noted how students had opened up much more since COVID and how well they worked together. On the way home, a student shared, "The students at my table were really nice. We shared our Snapchat." The seniors were sorry that it was their last challenge and were trying to figure out ways they could participate next year. Those that are URI-committed were already planning on skipping classes to meet up in the dining hall for a meal or two. Thank you SMILE for all your hard work and for providing this opportunity to so many.

CLUB UPDATES

WEST WARWICK HIGH SCHOOL West Warwick

James Owen, Christopher Baccei
By West Warwick SMILE Club

West Warwick High School SMILE has had a busy year! We have spent the beginning of the year exploring the engineering process and problem-solving! In various activities, members have effectively worked together and truly learned what it takes to be an engineer. In an activity called “Toxic Popcorn Challenge”, members formed groups and worked together to create the best method to save the community from the “toxic popcorn.” These activities prepared us for the annual Family Science Night where members shared our learnings with families, friends, and more. In addition to our weekly meetings, the SMILE club took an exciting field trip to the Norman Bird Sanctuary where we spotted a variety of birds and enjoyed the outdoor scenery. We even had the opportunity to explore the forest and bay! From chemical reactions and working with circuits to constructing air skimmers and bridge-building, the WWHS SMILE has had a tremendous amount of fun!

PARTNERSHIPS

We would like to thank the following list of funders that have allowed SMILE to grow and continue to provide high quality after-school STEM programming to Rhode Island students:

CENTRAL FALLS
Ella Risk Elementary School
 Shena Tremblay
 Laticia Biggerstaff
Calcutt Middle School
 Molly Forte
 Kelly Sierra
Central Falls High School
 Charles Fisher
NEWPORT
Claiborne Pell Elementary School
 Kevin Bolano
 Jeannine Walsh
Thompson Middle School
 Candace Lewia
Rogers High School
 Elizabeth Letourneau
 Brooke Anderson
SOUTH KINGSTOWN
Peacedale Elementary
 Christine Pierce
 Martha Badigain
Curtis Corner Middle School
 Valerie Light
 Anna Stuart-Vieira
S.Kingstown High School
 Reed Fraser
 Michael Lobdell
WESTERLY
Westerly Middle School
 Carolyn Michaud
 Robert Brennan
Westerly High School
 Lesley Fastovsky
WEST WARWICK
Horgan Elementary School
 Maria DePalma
 Amy Horne
Deering Middle School
 Eugene Gallo
 Christopher Baccei
West Warwick High School
 James Owen
 Christopher Baccei
WOONSOCKET
Globe Elementary
 Brittney Pyszczynski
Coleman Elementary
 Scarlett Schultz
Citizens Elementary
 Kirby Greene
Woonsocket Middle School (2 clubs)
 Jenn Hardy
 Michaela Gormley
 Ian Chernasky
 Sean McBride
Woonsocket High School
 Brigitte Hernandez
 Ethel Locke

AAUW
 Anonymous
 Amgen Foundation
 American Honda Foundation
 Arnold Lumber
 The Champlin Foundations
 Connecting For
 Children and Families
 Constellation, an Exelon company
 Dominion
 Dassault Systemes
 The Gerald Claude Kirby Trust
 Graphic Expressions
 June Rockwell Levy Foundation
 Nordson Corporation Foundation
 Ocean State Charities Trust
 Ramsey McCluskey Family Foundation

Red Sox Foundation
 Schneider Electric
 Steere Engineering
 Toray Plastics, America, Inc.
 University of Rhode Island
 van Beuren Charitable
 Foundation
 Verizon Foundation
 YMCA of Greater Providence
 Central Falls School Department
 Newport School Department
 South Kingstown School
 Department
 Walmart Foundation
 Westerly School
 Department
 West Warwick School Department
 Woonsocket School Department

We would also like to thank our Individual Supporters, who are vital in helping The SMILE Program to continue its mission

			<i>The SMILE Program</i>
SMILE STAFF	URI RESOURCE FACULTY	COLLEGE OF ENVIRONMENT & LIFE SCIENCES	<i>The Science and Math Investigative Learning Experiences (SMILE) Program is an enrichment program for educationally disadvantaged students in grades 4-12 in seven districts in Rhode Island. SMILE's goal is to provide group activities for these students in science, technology, engineering and math. Generous gifts by participating donors make this program possible. The SMILE newsletter is published three times a year. We encourage your comments and ideas. Please share this newsletter with others who might be interested in SMILE.</i>
Carol Englander Executive Director	Ellen Reynolds, Vice President for Student Affairs	Larry Englander CELS, Plant Sciences	
Claudia Hoddersen Curriculum Specialist	ENGINEERING	Evan Preisser CELS-BIO Tolani Olagundoye CELS NRS	
Jo Ann Basel Director	Manbir Sodhi		
Cheryl Swartz Accountant	George Tsiatis		
Susan Axelrod Program Development Coordinator	BOARD OF DIRECTORS John Peterson, President Bill Koonis Vice President Ruth Jarrett, Treasurer Fran Alexacos, Secretary Malcolm Spaulding, Board Member John Cooney Jr., Board Member Glenda Kirby, Board Member Zachary Pimentel, Board Member Augusto Gomes, Board Member Michaela Cashman Board Member		
Bailey Krause Publications Coordinator			
Meghan Corneau URI HS Coordinator			