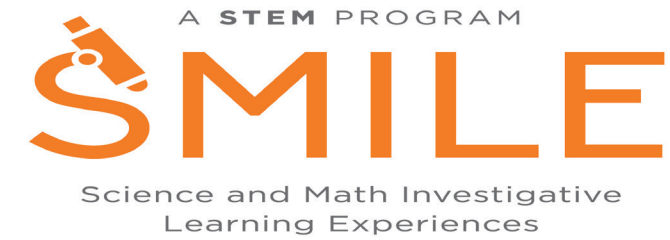


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 volume 24 No.3, May 2018

24 Years of service

## 4th Grade URI Ecology Field Day



On April 12, 2018, 75 SMILE students attended the second annual Fourth Grade Ecology Field Day at the University of Rhode Island. Hailing from seven school districts and nine elementary schools across Rhode Island, the students rotated through three ecology-themed stations, enjoyed lunch in Butterfield Dining Hall, and interviewed URI students.

SMILE students were easily spotted across campus with their bright red SMILE sweatshirts. Undergraduate and graduate students from the College of the Environment and Life Sciences volunteered time as mentors and led stations.

*Continued on Page 2...*

## Donate

The SMILE Program relies on the generous support of our donors. Invest in the future of RI students by supporting SMILE.

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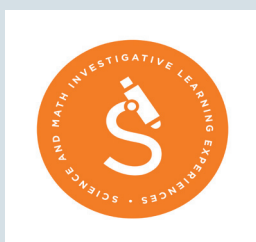
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## Visit Us Online

[www.uri.edu/smile](http://www.uri.edu/smile)

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## Calendar

Weekly SMILE Club Meetings  
 Scientific and Career Exploration Field Trips

Family Science Nights  
 November-December 2017

Special Annual Events  
 High School  
 Engineering Challenge Weekend  
 April 27-28, 2018  
 URI Kingston Campus

Middle School  
 Engineering Challenge Weekend  
 March 23-24, 2018  
 URI Kingston Campus

Elementary School  
 5th Grade Outdoor Science Adventure  
 April 6-8, 2018  
 URI Alton Jones Campus  
 4th Grade Ecology Event  
 April 12, 2018  
 URI Kingston Campus

## Teachers' Professional Development Workshops

August 23-24, 2017	Dec 8, 2017	May 22, 2018
University of Rhode Island	University of Rhode Island	University of Rhode Island
Math and Science Curriculum Planning for the year	Math and Science Curriculum Special Events Planning	Program Evaluations

Printing donated by **Schneider Electric**

## High School Engineering Challenge



SMILE students participated in SMILE's 24th annual High School Challenge Weekend. Students arrived to the University of Rhode Island on Friday, April 27th, from Central Falls, Newport, Pawtucket, South Kingstown, Westerly, West Warwick, and Woonsocket. Each team was assigned the task of creating a car that was dual powered and could carry a cargo on a straight track. The motor was powered by a battery pack, while the headlights were connected to a solar panel. In addition, the students had to incorporate a transmission and a power switch into their design. There were a number of challenges the teams could tackle, these included overall fastest car, lightest vehicle, most creative design and most cost efficient.

*Continued on Page 6...*



“I enjoyed learning about the environment a lot because at first I didn’t really know that much about it but now I do, and it was fun.”  
-Horgan SMILE Student



Several members from Society for Women in Marine Science (SWMS) led activities for the Marine Encounters station. During this station, students searched for pieces of plastic in the guts of seabirds, used a dichotomous key to identify a variety of marine organisms, completed a food web and identified several New England species of seaweeds. Mentor also led activities in the greenhouse. There, students planted cherry tomato plants to take home, checked out rare plants in the conservatory, and tested soils for permeability. The third station brought students into North Woods. Here students flipped logs and searched for critters. The most exciting finds were a red-backed salamander and a 4-toed salamander! At North Woods, they also explored a vernal pool and counted wood frog egg masses. They also learned about dissolved oxygen and pH.

As the day started to wind down, SMILE students returned to Beupre Auditorium and sat down with undergraduate students and students took turns asking questions. Mentors talked about what it was like to apply to college and shared their own academic journey. After the mentor interviews, SMILE students said farewell to the URI mentors and headed to the buses with tomato plants in tow. For the majority of the students, this was their first time on a college campus. We can’t wait to see them back on campus again soon!

Below: SMILE students explore marine life at the Marine Encounters Station



- CENTRAL FALLS**  
Ella Risk Elementary School  
Sheryl Wilson
- Calcutt 5th grade  
Karen Cardoza
- Calcutt Middle School  
Karen Cardoza  
Molly MacDonald
- Central Falls High School  
Laura Stanish  
Kerri Valentine
- NEWPORT**  
Claiborne Pell Elementary  
Lori Delemos  
Mary Nordby
- Thompson Middle School  
Candace Lewia  
Elizabeth Gibbs
- Rogers High School  
June McGreavy
- PAWTUCKET**  
Shea High School  
Ann Marie LaRoche
- Tolman High School  
Kevin Collard  
Nicole Ellis
- Goff Junior High School  
Janelle Haire  
Jennifer Bromley
- SOUTH KINGSTOWN**  
Peacedale Elementary  
Tera Tucker  
Christine Pierce
- Curtis Corner Middle School  
Zach Bioteau  
Valerie Light
- S.Kingstown High School  
Christina Antaya-Dube
- WESTERLY**  
Springbok Elementary School  
Lisa Kenyon  
Nicole Roberts  
Paige Sayer
- Westerly Middle School  
Carolyn Michaud  
Robert Brennan
- Westerly High School  
Sharon Ficarra  
Susan Wood
- WEST WARWICK**  
Horgan Elementary School  
Maria DePalma  
Amy Horne
- Deering Middle School  
Eugene Gallo  
Christopher Baccei
- West Warwick High School  
Eugene Gallo  
Christopher Baccei
- WOONSOCKET**  
Harris Elementary School  
Melanie Clark-Medysesy  
Katherine Krause
- Coleman Elementary School  
Jennifer Paolozzi  
Anissa Hoard
- Citizens Elementary School  
Denise Consiglio  
Jodi Cifelli
- Woonsocket Middle School (2 clubs)  
Paulette Metivier  
Deana McCarthy  
Marie Gentile  
Rania Aghia
- Woonsocket High School  
Julia Grassini  
Ethel Locke

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:

- Amgen Foundation
- Amgen Biotech Experience
- Amica
- Anonymous Donors
- Arnold Lumber
- The Champlin Foundations
- Connecting For Children and Families
- Constellation, an Exelon company
- Dominion
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- Gilbane
- Holiday Inn South Kingstown
- Lloyd G. Balfour Foundation, Bank of America, N.A Trustee
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- NOAA B-Wet Program
- Pawtucket COZ-21<sup>st</sup> Century
- Pfizer
- Ramsey McCluskey Family Foundation
- Rhode Island Foundation
- Schneider Electric
- Steere Engineering
- Toray Plastics, America, Inc.
- University of Rhode Island
- URI Transportation Center
- van Beuren Charitable Foundation
- Verizon Foundation
- YMCA of Greater Providence
- Central Falls School Department
- Newport School Department
- South Kingstown School Department
- Pawtucket School Department
- 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

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Rebecca Gonzalez  
West Warwick High School  
URI, Verinary Science



Elizabeth Poirier  
West Warwick High School  
UMass Amherst, Animal Science



Lucas Nicolau  
West Warwick High School  
URI, Pharmacy



Alexandra Cuomo  
West Warwick High School  
URI, Environmental Studies



Austin Laramie  
West Warwick High School  
UMass Amherst, Computer Science



Krisian Capasso  
West Warwick High School  
Undecided, Acting



Kyra Shindler  
West Warwick High School  
URI, Secondary Education



Abayomi Afolabi  
Shea High School  
CCRI, Computer Engineering



Jillyan Frederick  
Rogers High School  
Rhode Island College, Nursing

**SMILE Seniors Not Pictured:**

Jack Garforth, Newport High School  
Kyondrah Pemental, Newport High School  
Nathaniel Ottavi, Woonsocket High School  
Dakota Suggs, Woonsocket High School  
Ashley Swenson, Woonsocket High School  
Calvin Bessette, Woonsocket High School  
Benjamin Bessette, Woonsocket High School  
Magee Bahn, Woonsocket High School



SMILE Students tour the conservatory and plant cherry tomato plants to take home.



Above: SMILE students test soils for permeability.

**“I liked learning about the environment because I love nature and learning about the environment will help us later in life.”**  
**-Peacedale SMILE Student**



In the North Woods, SMILE students learned about native flora and fauna while exploring a vernal pool and tested water PH and dissolved oxygen. Here they found Red-backed Salamander, 4-toed Salamander, and Wood Frog egg masses.



**Many thanks to SMILE Funders including Amgen, Pfizer, Ramsey McCluskey Family Foundation, Schneider Electric, Toray Plastics, van Beuren Family Foundation, and Verizon for their support. Special thanks also to our URI graduate student mentors for making this such a memorable science experience for our youngest SMILE students.**

## Goff Middle School, Pawtucket

Jennifer Bromley and Janelle Haire  
By Goff SMILE Club

One favorite thing about SMILE this year is working with my teammates at the Weekend Challenge. -Precious Aruwajoye  
Whenever I'm in SMILE I always have so much fun! I never get bored there and I love doing all the projects. My favorite project so far was working with the magnets. Sophia Alonzo

I joined SMILE because I am interested in engineering, science and math. One of the best things that I love about SMILE club was going to the weekend challenge and getting to compete with other teams and even make new friends from other schools. -Megan Cobb

My favorite thing that we engineered in SMILE Club, was the crash test cars with an egg in it. To test the car we drove it down a ramp. If the egg cracked, then we had to make adjustments to the design. But if it didn't then you get to keep the design.- Ryan Minasian



## Horgan Elementary, West Warwick

Amy Horne and Maria DePalma  
By Horgan SMILE Club



This year has been another wonderful year of SMILE for our West Warwick Elementary SMILE Club students. This year we had six returning fifth graders and fourteen new fourth graders in our club. We met weekly to explore a variety of topics in science, incorporating math into our activities and experiments.

We began our year learning about design and engineering. We found that with very few resources and materials, we could figure out how to build sturdy structures to serve a variety of purposes. We built tall towers with just newspaper and some tape. We built small chairs from cardboard to support a stuffed animal and a larger one to support any one of us—even our teachers! We built strong bridges and even houses with paper and tape that could withstand "hurricane" winds, and also catapults, to chuck candy pumpkins, with only some tongue depressors, spoons, and rubber bands!

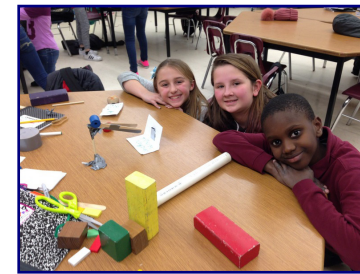
After a fantastic Family Science Night, where we shared a great meal and our engineering skills with our families, we turned our attention to nature and the environment. We dissected owl pellets, arranging the bones we found into skeletons of small rodents. We learned more about birds when discovering how the large pigeon population in New York City encourages hawks to build their nests there. Building our own birds helped us to learn about the differences in birds influenced by their habitats.

We also learned about the water cycle, camouflage and mimicry, wetlands vegetation, and biotic and abiotic factors in nature.

All this was in preparation for our grade five EOSA and grade four Ecology Day. The fifth graders enjoyed a chilly, but fabulous weekend. And as this goes to print, the fourth graders are setting out for a great day at URI.

## Harris Elementary, Woonsocket

Melanie Clark-Medyesy and Katherine Krause  
By Harris SMILE Club



SMILE is the best after school program for me! SMILE helps me with STEM skills and my teamwork skills. I also get to have fun on fieldtrips and during the normal SMILE day with my friends. That is why I really like SMILE. -Jaeli Levasseur

We went on a tour of Hasbro. We got to see many engineering experts and we got to see how they make the toys and prototypes. In one room we saw all the engineering process for making play doh, and later we got to see how they make the Nerf blasters and other Nerf products. They let us shoot the blasters! -Jordyn Blain

SMILE is great. We engineered a lot of things like marble runs, a steady hand electric game, and so many others. Engineering is in STEM. STEM stands for science, technology, engineering and math. I love SMILE so much. I wish I could stay in it forever! -Arianna Green

When learning about ecology we made biodomes. First we recycled many soda bottles, and we taped two together. In the top part, we added soil, plants, worms, and crickets. The aquatic section had fish, snails and aquatic plants. I really enjoyed taking data on the water and soil temperature. -Zaina Sheikh



## AWARDS



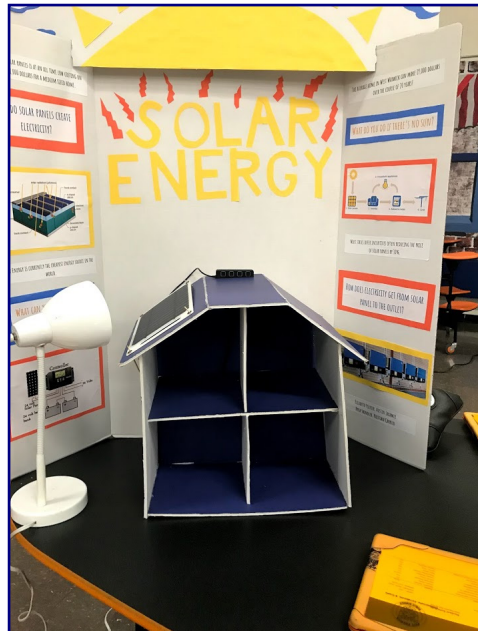
### SMILE Mentor Receives Esteemed Donald Cunnigen Award for Excellence in Graduate Studies.

On Tuesday April 24, Danielle Perry received The Cunnigen Award in recognition of outstanding academic performance, active scholarly research, leadership, and service. Danielle has been a SMILE Mentor for our SMILE elementary students during our annual events including the 5th grade Elementary Outdoor Science Adventure and 4th grade URI Ecology Field-day.

Danielle is currently in her 3rd year of her PhD program. Her research involves monitoring salt marsh restoration projects. She measures carbon dioxide and methane emissions as well as soil biogeochemistry of salt marsh areas undergoing restoration. She also studies the impacts of seaweed accumulation on salt marsh environment. After she graduates, she plans to enter the field of coastal resource management and conservation.

## West Warwick High School

Eugene Gallo and Christopher Baccei  
By Olivia Ferris



The West Warwick SMILE club has had an incredibly eventful year! The students hit the ground running and started off the year learning about the Engineering Design Process. This aided in the completion of the many activities provided throughout the year. For example, one of our earlier activities was to construct working solar energy pizza boxes. This was an idea that many of us have never even thought possible before! Sticking with the solar energy theme, we also learned quite a bit about thermometers and radiometers, and the benefits of solar energy. Then, with our next unit about constructing mousetrap cars we learned about wheel-to-axle ratio and friction. Now, we are putting our construction skills to the test once again, this time with gears!

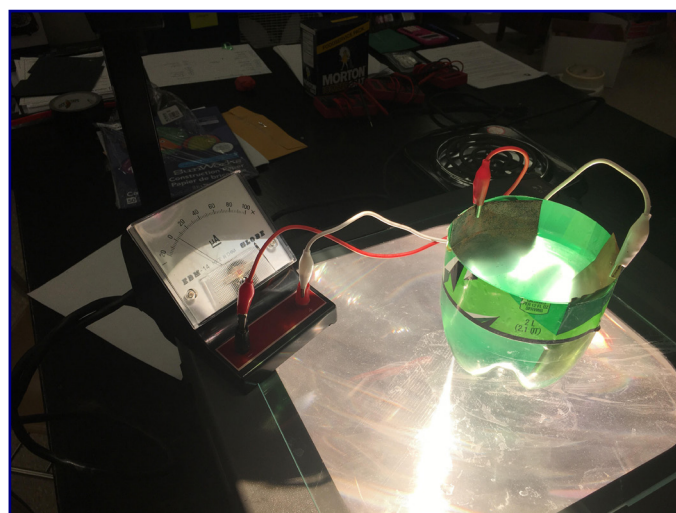
With everything we learned this year, the students at West Warwick High School are most definitely ready to put our knowledge to the test and take on Challenge Weekend. In fact, for the students at West Warwick High School, Challenge Weekend won't be much of a challenge at all when we apply all of the knowledge learned through SMILE.

## Woonsocket High School

Ethel Locke and Julia Grassini  
By Woonsocket SMILE Club

### Solar Technology and The SMILE club

The Smile class is currently studying the science of Solar power; we are learning how to use: different colors, angles, materials, copper, salt wire, and pieces of electrics to measure electromagnetic forces to make items to turn sunlight into electricity. To quote the co-leader of the Woonsocket High School Smile team Mrs. Locke "Our mission with studying solar electricity and how it works is to teach our students about the ways we as a community can create electricity without the use of fossil fuels as well as raising awareness in our community about the benefits of solar power." The Smile students are currently studying up on Solar power because the state wide challenge weekend where Smile teams from all over Rhode Island will go to the University of Rhode Island. They will engage in STEM challenges, share their results, modify their project, and come together to advance their knowledge and be able to spread the word about how important the upcoming advances in solar power will decrease petroleum use and pollution resulting in more efficient solar power to give us clean electrical energy.



## Calcutt Middle School, Central Falls

Karen Cardoza and Molly MacDonald  
By Calcutt SMILE Club



The Calcutt Middle School SMILE club just rocked the challenge weekend! We had a great time working with students from all over the state to build working cranes and magnetic-levitation cars. At the challenge weekend, we also enjoyed eating at the dining hall, taking a campus tour and learning about college life. Many of us now hope to go to URI after high school. Now that we are done with the crane curriculum, we are going to complete

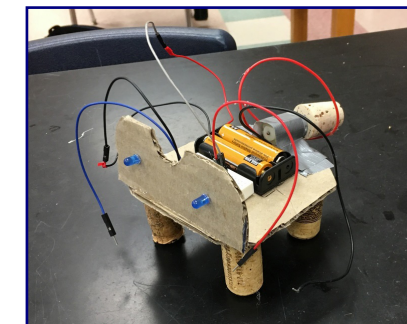


some more engineering challenges. We are also getting ready to complete our stewardship project. We are brainstorming a list of possible projects, we have decided that we would like to do something that gives back to our school community. That's all for Calcutt! We are looking forward to finishing our SMILE season strong!

## South Kingstown High School

Christina Antaya-Dube  
By Nick Pierson

It has been a great year so far in SMILE here at SKHS, and there is much more to come! We are a smaller SMILE group than some, but that just makes every moment even more special! We have learned many new skills this year, including skills that can be greatly beneficial to our next generations. Our group started with learning about the different types of power. We learned how to use hydraulics and pistons, and succeeded in making two hydraulic lifts. We next moved on to electricity, in which we learned about all the different types. We made robots using circuit boards, and very simple but effective household products. There were popsicle sticks, cardboard, and copper wiring, to name a few. We next, and are currently as of this story, learning about the types and uses of energy. We have focused mainly on solar energy, as it is rapidly growing industry. We have made solar energy from just water, salt, and some scrap copper sheets! We all have so much fun learning and applying our newfound skills to projects. The fun is only the beginning of this substantial and outright awesome after-school club! Keep it up!





**“SMILE has positively influenced me over the years because it has showed me there are so many opportunities after high school, and having hands-on experience is great to see what you really like to do.”**

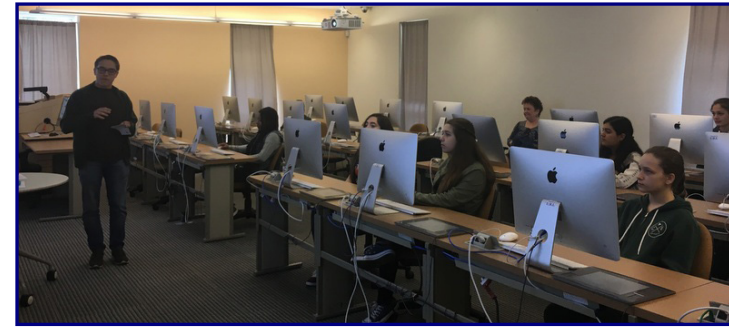
After beginning with a quick engineering challenge of building the tallest tower out of index cards, the groups were underway using the engineering design process to solve this challenge. As usual, volunteer mentors were an integral part of the event. URI students from different organizations as well as professionals from Schneider Electric were a valuable part of the day.

After a morning of an ice-breaker and designing the prototype, the students made their way to Hope/Butterfield for a much deserved lunch. After lunch, the students listened to Chris Kearns, a former URI student and an engineer from the Office of Energy Research in Rhode Island as he spoke about solar energy in our state. Much to our surprise, solar fields are becoming a presence in Rhode Island. They can be found at superfund sites as well as along route 95.

The talk seemed to be what the students needed in meeting success in building their vehicles. By midafternoon, many of the students were testing their vehicles on the track. With each run, students returned to their workstations to make improvements on their designs. Midafternoon brought another student break, with students attending a Q&A about life at URI with current URI students. The SMILE students enjoyed hearing first-hand accounts of college life. Once the long day of engineering was complete, SMILE students enjoyed recreation in the URI pool and on the Keaney basketball courts before heading to the Holiday Inn in South Kingstown.

On Saturday, after breakfast, the students obtained hands-on computational experiences in the manipulation of protein folding at a high tech computer lab. This is a capstone of a semester-long club activity in presenting students with the fundamental molecules of life and the information flows among them: from DNAs to RNAs to Proteins. The activities are a gateway into a new Bioinformatics theme at the High School Engineering Challenge. The students also gained first hand experiences with important proteins in human health and disease through looking at the models created from 3D printing, including viral capsids from the human HPV, amyloid proteins that causes Alzheimer’s disease, and the human hemoglobin and insulin proteins. The Bioinformatics experience was welcomed by the SMILE students. As stated by a student, “I think the bioinformatics activity was very interesting. I understand it pretty well and I think that it’s a very important field of study. The more we understand the structure of proteins the better we can synthesize fixes to problems that exist in our genetics or immune system.” The Bioinformatics activities are funded through a National Science Foundation grant to Dr. Ying Zhang and her students at the College of the Environment and Life Sciences at URI.

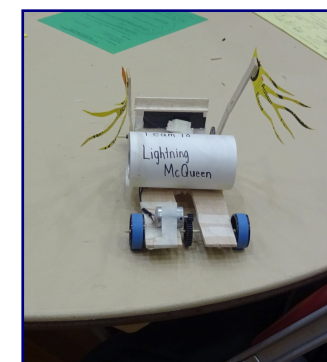
**-Congratulations SMILE Seniors-**



*Top Left: Zachary Pimentel, an alum of the SMILE program currently pursuing PhD study with Dr. Zhang, is explaining the importance of protein folding to our health. Top Right: Graduate students from the Zhang Lab showcasing the 3D printing of a HPV capsid*



Many thanks to our funders including Amgen, Pfizer, Schneider Electric, Toray Plastics, van Beuren Family Foundation and Verizon for their support for the High School Engineering Challenge Weekend.



**SMILE Hybrid Solar Cars!**

