On April 7th, the SMILE Program’s 5th grade students stepped off a school bus and onto the beautiful and peaceful grounds of URI’s W. Alton Jones Campus. They were welcomed by 21 URI mentors who spent the spring semester preparing themselves, activities and hands-on lessons to educate the SMILE students about the ecology of the W. Alton Jones Campus during their 3 day, 2-night stay. The SMILE students and URI mentors quickly bonded on Friday during their first field study, dinner, campfire and cabin talks before it was LIGHTS OUT for a restful sleep to prepare them for a full day of field studies, games, meals and another campfire on Saturday. The students and mentors spent the weekend together learning about the plant and animal life throughout the campus. The URI mentors not only captivated the SMILE students with their hands-on lessons at four different sites, they also led the students in fun campfire songs and shared their challenges and successes throughout their academic careers. The EOSA weekend was a rewarding, heartwarming and educational experience for all in attendance.

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“One touch of Nature makes the whole world kin.” -William Shakespeare

At the Bubbling Pond, URI mentors engaged the students by getting down and dirty in the mud to learn about macroinvertebrates and their importance in the ecosystem of the pond. At the pond, the students found adult salamanders, saw salamander egg masses and got wet while looking for life and/or evidence found adult salamanders, saw salamander egg masses and got wet while looking for life and/or evidence of life in the pond and identifying the different plants and animals they observed.

In the Pine Forest, URI mentors involved the students in learning not only about the massive Pine trees but also about the history of W. Alton Jones and how human impact allowed the students to observe succession in progress and take a walk back in time. The Eastern White Pine trees were once under the possession of the British Crown and resulted in deforestation in New England. The students learned how to estimate tree height and diameter and how to determine if a tree had the pre-favored measurements of the British Navy to be used for building of their ships and ships’ masts.

“My favorite place in nature is everywhere!” -SMILE 5th grade student
SMILE is the best club. As the beginning of this year we learned about engineering. We loved building a roller coaster, satellites in the wind tunnel, quick builds, building with dowels and elastics, bobsleds racing, domino challenges, robots and gum drops and toothpicks. Yum! We even tasted vomit flavored jelly beans! Yuck! We learned that engineering solves problems and engineering is involved in almost everything we do and use. We were able to share our new knowledge about engineering with our families at Family Science night.

Another great thing about SMILE were the fieldtrips. They were awesome and extremely amazing. We went kayaking on the Wood River! Thanks again to all the volunteers. For most of us it was our first time! We are hoping to kayak again this spring. We also went to the Boston Science Museum in January. None of us wanted to leave there! We saw a phenomenal movie about extreme weather at the Omni Theater. We went up and down musical steps, and played with science in the playground, engineered trampolines and so many more things that we felt we wanted to stay the whole weekend! Hey wouldn’t that be a great idea for a fieldtrip.

Lately, we have been learning about ecology and food chains in different habitats. We learned there are producers, consumers, and decomposers. Some of them are omnivores, carnivores and herbivores and we now realize how everything is connected. We are looking forward to the URI Ecology Day! Last but not least, “Don’t forget to SMILE.”

As first year members of the SMILE program, our Westerly Middle School students offered reflections on the experiences they will take away from their participation this year. Here is a sampling of the impact SMILE had on our students.

“The URI Weekend was a challenge for us because we interacted with minds from different schools, which was pretty amazing.”

“I enjoyed Family Science Night the most because we got to showcase to our family the benefits of SMILE. I look forward to continuing throughout high school.”

“As a first time SMILE member, I came in not expecting much. I was in previous engineering programs after all. However, I was finding myself with a lot of pride, thinking outside the box, and challenging myself. SMILE made us all dream high. We were meant for Mars, or meant to cure cancer, or make history in general. We were determined to become leaders, not followers, and to one day outsmart the old and challenge the new.”

Deep in the woods at one of the streams, URI mentors had the students determine if the stream was healthy by calculating its flow rate and looking for macroinvertebrates that are indicators of a healthy stream. The SMILE students carefully examined notching logs and stumps for organisms that are essential for decomposition and the recycling of nutrients. At the stream, students saw how live and dead trees are microhabitats for species that range in size from microscopic to larger animals such as birds, squirrels and owls.

At the vernal pool, students had the opportunity to see egg masses of both salamanders and wood frogs. URI mentors taught the SMILE students about the life cycles of both species and spent some time exploring the area for juvenile and adult salamanders and wood frogs. Students observed two different types of lichen and learned the significance of the unique organisms.


**Club Updates**

**Rogers High School, Newport**

*June McGreavy, Beth Stump*

*By Lucas Machado & Jack Garfouth*

From the start of the year, we’ve been hard at work at SMILE. Our curriculum, for the first half of our school year, focused on several types of engineering, such as civil and biomedical. We participated in the "Family Science Night" with the local SMILE clubs at Thompson Middle School, and we then transitioned into the latter part of our curriculum, forensics and crime scene investigation (CSI), rounded out by our high school challenge weekend at URI, which focused on solving a crime.

We conducted hands-on engineering experiments that included making a paper bridge, spaghetti tower, prosthetic hand, and silly putty all requiring us to follow the Engineering Design Process: a 7-point matrix used by all engineers to solve world problems. We learned that engineering is all about trial and error, and that materials must be used wisely so that we can efficiently and effectively solve a problem.

In preparation for the URI Weekend Challenge our new focus was forensic science. We learned how to analyze trace evidence, such as hairs and fibers, as well as the skills required in fingerprint identification. At the Weekend Challenge, we participated in several labs, such as fingerprint and shoeprint identification, trace evidence analysis, as well as an electrophoresis lab, in order to solve the crime of the missing Chrysanthemum bonsai plant.

**Coleman Elementary, Woonsocket**

*Jennifer Paolozzi, Anissa Hoard*

*By Coleman SMILE Club*

This year in SMILE, we have done so many amazing activities! We started the year by learning about engineering. It was challenging to build a tower of cards that could withstand a strong wind. We also experimented to create the best solution to make bubbles with and even built roller coasters!

It's always fun to prepare for the Elementary Outdoor Science Adventure and the Fourth grade Ecology Field day. We LOVE to visit URI and experience college life. We also took a kayaking trip on the Wood River that was incredible. It was so peaceful and beautiful. WE LOVE SMILE!

**SMILE Seniors**

Kassandra Do Rosario
Shea High School
Roger Williams, Criminal Justice

Karina Hernandez
West Warwick High School
URI, Kinesiology

Aiden Chen
Westerly High School
Rensselaer Polytechnic, Computer Science

Rosalind Lucier
South Kingstown High School
Wellesley College, Biochemistry

Minandira Silva Da Cruz
Shea High School
Undecided, Accounting

Scott DeBoer
South Kingstown High School
CCRI, Cyber Security

Anita Koala
Shea High School
RIC, Physician Assistant

Daoule Mariko
Shea High School
Undecided

SMILE Seniors Not Pictured:

Chris Nadeau, South Kingstown High School
Eva Coutinho, Shea High School
Diogo Paulino, South Kingstown High School
SMILE, otherwise known as the Science and Math Investigative Learning Experiences Program, is a program that allows its members insight of math and science. In earlier years, we have worked on topics such as cranes, planes, maglev trains, and bridges. The first half of the year we engaged in multiple engineering activities exposing our group to the engineering design process. This lent itself conveniently to the second half of the year when we engaged in bridge building. No matter what task is given to us, we take it and work with enthusiasm and a desire to learn.

Throughout our second semester, we began studying bridges with a focus on truss bridges. The weekly activities culminated in our group constructing small balsa wood bridges that were tested to see how much of a load they could handle. From this point, we determined two bridges to take to our challenge weekend at the University of Rhode Island to test on the shake table. Our SMILE club attacked the bridge curriculum with great enthusiasm and were very excited to attend our challenge weekend.

Challenge weekend, the main event of SMILE, is a unique engineering experience held at the University of Rhode Island. Our activities and experiments throughout the year all prepare us for these two days, where we collaborate with several different schools. Students are put into mixed-school groups and are faced with an engineering challenge to finalize in a certain amount of time. This particular challenge forced students to work together in order to create the most cost efficient and structurally sound bridge. At the end of the challenge there is a closing ceremony focused on key points of the weekend and a discussion with the University’s admissions team. Information is also available for everyone about the scholarships, different careers in science, math, and engineering, and the path to get there.

For the past semester, the SMILE curriculum was focusing on Forensic Science which is the use of scientific means to analyze physical crime evidence. This science deals with hair samples, fingerprints, DNA, and making detailed observations. In order for us to expose ourselves to forensics, we staged crime scenes and tried to figure out what happened. Fake blood was splattered throughout the room in order to make the scene more realistic. This activity was extremely fun and forced us to analyze all the small details in the room. Currently, we are building our own model of DNA of different suspects of a murder so that we can compare to the DNA that we found on the sight. Creating the double helix shape is very interesting since the structure cannot be seen with just the human eye.

My experience at the SMILE Program at Tolman HIgh School has been great. This is my first year in the program and I regret not taking it sooner. It has opened me to many different sciences that I would have never done on my own. My favorite field of science is biology but being exposed to forensics showed me how a lot of the sciences are interconnected. SMILE has helped me reach my goals by getting me involved with more science besides what I learn in class. Therefore, this whole experience has been great for me and I can't wait to do it again next year.
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, and looked at plankton under a microscope.

Mentors 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 find was spotting a red-backed salamander, a common salamander found in woodlands. 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 the science quad and sat down with an undergraduate student. For about thirty minutes, students took turns asking questions. Mentors talked about what it was like to apply to college and shared their own academic journey. SMILE students also learned about a few different types of environmental scientists including, horticulturalist, soil scientist, herpetologist, ecologist, and marine scientist.

After the mentor interviews, students shared posters created in their clubs showcasing activities at Family Science Night and stewardship projects. 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!

“Science is a great way to connect to nature.”
-SMILE 4th grade student