THE UNIVERISITY OF RHODE ISLAND
SMILE Program
*Science and Math Investigative Learning Experiences*

In Rhode Island School Districts

Central Falls
North Kingstown
Pawtucket
South Kingstown
West Warwick
Woonsocket

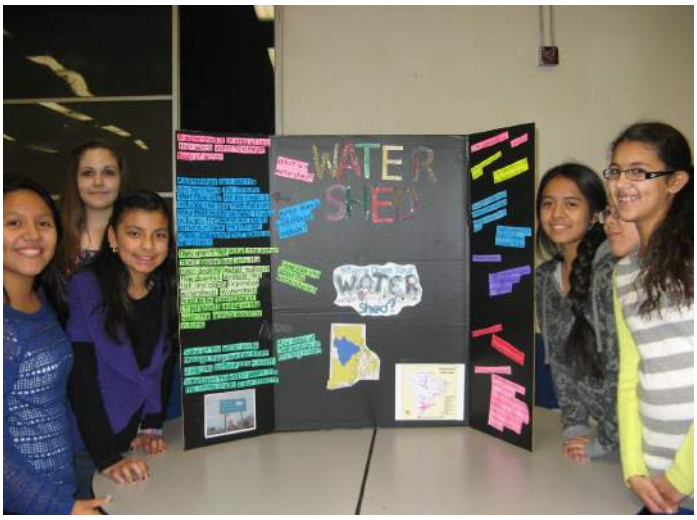
***Newsletter and Report***
***volume 20 No.1, Dec 2013***

# SMILE Communities Participate in Family Science Nights

SMILE West Warwick and Woonsocket Family Science Nights provided the opportunity for families and community members to become familiar with watershed and forestry environmental science issues. These fun events provided an environment and structure where students and their families explored and talked about science. The event brought together students and their families, friends, teachers, school administrators, and community leaders for an evening of interactive activities and friendship. Each evening started with a potluck dinner where families get to greet old friends and make new ones.

The SMILE students engage their parents and family members as learners. Groups of parents and siblings rotate through the stations as the students present and teach hands-on activities. Because parents are rotating, by the end of the activity, students often have presented five or more times. For many students, this is their first experience at teaching, and by the end of the evening after many presentations to strangers they are definitely enjoying their teaching role, and have built up lots of confidence and self- esteem.

Parents are very proud of their child's accomplishments. Many parents have expressed to SMILE staff their delight and surprise at seeing their child as a competent teacher. It is an evening where families begin to bond into a SMILE community and students impress everyone with their enthusiasm for science and math and teaching.




In each school district, SMILE staff presented College Awareness and Planning, including requirements and financial aid. This year, The SMILE Roll Call of Success, with photos of our SMILE high school and college graduates, and the colleges they attend, was popular.

Family Science Night in each community is characterized by warm hospitality, a sense of community, and a common purpose: to promote these children to continue to do well in school, stay in SMILE, and graduate from high school well prepared to enter college to pursue the career of their choice – and having the support of families helps this happen!

*continued page 2*

*Adam Greenman, RIAPSA Excecutive Director presents the award to Carol Englander, SMILE Director*

# SMILE Receives Prestigious Award

## *2013 LIGHTS ON AFTERSCHOOL OUTSTANDING YOUTH PROGRAM AWARD*

The Science and Math Investigative Learning Experiences SMILE Program has received the 2013 Lights on Afterschool Outstanding Youth Program Award presented by Rhode Island Afterschool Plus Alliance, an initiative of United Way of RI. This is the 20th year of The SMILE Program.

## *Healthy watersheds are important to protect our streams, rivers, lakes and ocean.*

All investigations occured close to the school, and students were encouraged to think about how the area is connected to the local bodies of water and the bigger watershed.

Where's the Groundwater Activity:
Often hidden from view, students "show" what-groundwater looks like and teach participants basic groundwater vocabulary.

Woonsocket Elementary School Students made interactive map of their school grounds using iPads, They put a red tape around certain areas in the map and made educational videos about each location.

West Warwick Elementary School students made several watershed and forestry board games.

Students show products that are flushable and dissoluble in the a water treatment plant.
Woonsocket Elementary School


Employees from CH2M Hill brought microscopes and specimens of organisms used in water treatment plants.

What's Flushable?
What Isn't?

It all ends up in the ocean

## Learning About Local Watersheds

Woonsocket High School Students made a model of a rain garden.

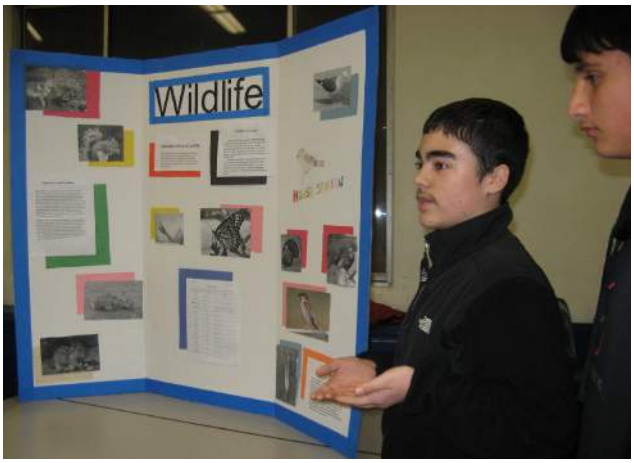
Watershed Models:
It is a matter of gravity. Water runs downhill picking up sediment and pollutants as it flows. The runoff ends up in the local watershed

Students created a “rain storm” with a spray bottle to demonstrate how pollutants wash through the watershed. West Warwick Elementary


West Warwick High school students present the results of their vegetation survey on the school grounds

Land use,pollution and traffic patterns. Students observed how the land is being used and the potential impact on the watershed. Deering Middle School.


Deering Middle school students present the results of their vegetation survey on the school grounds. They explained the specific characteristics of trees, bushes, shrubs, lichens, and moss, and the species found on the school grounds.




Students talk about their exploration of wildlife on the school grounds

## Summer Teacher Workshop

SMILE had another successful two-day Summer Professional Development workshop to kick off the year. From September through December, clubs will focus on **Watershed Forestry**. The focus is on the connections between students, their school, and town; they will make detailed observations on the impacts that their small area has on their immediate surroundings, wider community, watershed, and state. Students will investigate their school grounds and local watershed in the fall and early winter while preparing to develop and implement a Stewardship Project for the spring. The goal of this project will be to increase biodiversity and/or decrease stormwater runoff at their school or local community site.

At the workshop, teachers learned how to create a schematic base map of Roosevelt Hall. In their clubs, students will make these maps of their school grounds with as much detail as possible. Though many of the investigations occur close to the school, teachers will encourage students to think about how the area under investigation is connected to the local bodies of water and the bigger watershed. They are provided with a map of their school that shows the boundary of the survey and will perform an initial site survey where they mark down observations such as plantings, green spaces, impervious surfaces, down spouts, storm drains, erosion issues, etc. They will then add to their maps to include topography/water flow, land use, traffic patterns, and history. Students will eventually make a finalized map to showcase at their district-wide Family Science Nights. Students will also take dimensions of their schools to determine pervious and impervious surfaces and measure infiltration rates of different surfaces. Elementary students will investigate how pollution spreads and find out more about groundwater with fun and interactive activities. All clubs will visit a local body of water to study decomposition and collect water quality data. They will also brainstorm Stewardship Project ideas based on their investigations throughout the Fall. Examples that they are considering include rain gardens, log piles, butterfly gardens, tree plantings, green spaces, making paved areas more pervious, dog waste remediation, etc. The students will come up with a short proposal and budget for their project before they put their ideas into ACTION in the Spring. All clubs also got to go on a beginning of the year field trip to kick off this watershed theme.

## December Teachers' Workshop

SMILE leaders from across Rhode Island came to the University of Rhode Island to attend the annual Winter Teachers' Workshop on December 5th .The SMILE family has grown to include Tolman High School in Pawtucket and a second Middle School club in Woonsocket. Our 38 SMILE teachers from six school districts have a wonderful level of enthusiasm and knowledge that generates good ideas, creativity, and exciting projects among their SMILE students. The collaborative efforts of the hardworking, dedicated SMILE teachers are a source of strength to The SMILE Program.

**HIGH SCHOOL:**
**Facilitators:** Carolyn Mason, Curriculum Specialist, and Lacey Feeley, Assistant Director of Programs
**Theme:** Biotechnology
*Highlights*: Activities allow students to learn more about biotechnology and bioengineering. David Vito, Assistant Professor of Biology/CCRI and Coordinator for the **Amgen Biotechnology Experience**, led a forensics lab to learn about agarose gel electrophoresis and DNA fingerprinting. In addition to learning about biotech, students will learn more about persistent chemicals in the environment. Dr. Rainer Lohmann and two graduate students, Erin Markham and Carrie McDonough, work at the URI Graduate School of Oceanography and study persistent chemicals. They presented two sampling techniques that each club is going to try. The samples will be analyzed and presented to the students at the Challenge Event in March.

**MIDDLE SCHOOL:**
**Facilitator:** Carol Englander, SMILE Director
**Theme:** Bridge Design and Construction
*Highlights*: Activities focused on the compression and tension forces that are a part of all bridges. Activities also include learning about earthquakes and earthquake-resistant bridges. Dr. George Tsiatis, Professor of Civil and Environmental Engineering, explained how earthquakes affect buildings and demonstrated, using a shake table, how metal frames simulating a multi-story building react to increasing frequencies and horizontal motion. In their clubs, students will construct a balsa bridge and bring it to the Challenge to test on the shake table. Teachers also planned for a field trip to see the major bridges in RI and Fall River, MA.

**ELEMENTARY:**
**Facilitator:** Gus Gomes, SMILE EOSA coordinator and Assistant Director
**Theme:** Abiotic and Biotic Factors that make up an Ecological Community
**Highlights:** Teachers participated in several activities that they will present to SMILE students in preparation for the EOSA weekend. We examined why our atmosphere is perfect for life with the "Goldilocks Principle" and "Mixing Ratios or Parts per Million" activities. Then we did biochemistry activities that showed the importance of pH, dissolved oxygen, nitrogen and other elements and compounds to living things in our environment.

## Harris Elementary School

Heather Neil
Stephanie Roberts

Watershed Investigations: Creating a base map of the school area.

We've been doing a lot of stuff in SMILE for the last three months. We measured around the school and we marked it on a map. We measured the length of the sidewalk and the street and we also measured all of the asphalt. The vegetation around our school needs a little help. Some of it is alive, some is dead and some is overgrown. We need to add some vegetation. The wildlife around Harris school is amazing. We found evidence of wasp nests, squirrel nests, and bird nests.

We also investigated the water flow at Harris School. We poured water on the ground to see which way it would flow. Some of the water flows toward the building instead of away. We took all of our data about Harris School's surroundings and drew a huge map. Then we took red tape and put it around places on the map and we made videos about each place. Now when you place an iPad over the red box, you can see SMILE videos made by SMILE students. Cool!

We also went on the Blackstone River Explorer. We liked it because it was very interesting. There was very interesting wildlife and the history of the fish dieing and now they are coming back. It was a very interesting field trip.

### National Science Teachers Association Conference
### SMILE Director Presents The SMILE Program
### Portland Oregon October 23, 2013.

In October 2013, SMILE director Carol Englander presented "Stem-ming the Tide of Science Dropouts" (or How to start a SMILE club) at the National Science Teachers Association Conference in Portland, OR.

After her presentation there were teachers from Washington State and Colorado who expressed interest in starting a SMILE club. One such teacher has already arranged for director Englander to meet with the school principal of Marysville WA middle school. Naturally we are ecstatic. We realize that for these teachers the biggest obstacle to start a club is finding the funding. SMILE looks forward to giving students from other states the opportunity to experience a SMILE club.

## Curtis Corner Middle School

Gina Haberlin
Jo Ann Basel


***C*** razy fun field trips! *Sydni*
***U*** nbelievably amazing brain fuel, popcorn…*Iona*
***R*** ealistic experiments like making floating objects…*Kaitlin*
***T*** eam building challenges are wicked awesome…*Shy*
***I*** lluminating the ideas of science…*Aidan*
***S*** ee and learn new things…*Haylea*

***C*** ool kayak Pawcatuck Watershed trip…*Jojo*
***O*** utstanding maps that we drew of our campus…*Elissa*
***R*** adiant minds working together on problems…*Matthew*
***N*** ew and fun things every day I walk through the door…*Hannah*
***E*** verybody has lots of fun doing the activities…*Emilia*
***R*** eally fun experiments…*Alyssa*

***S*** uper exciting team activities…*Hayden*
***M*** agnificent activities in SMILE…*Madison*
***I*** nteresting, fun things to learn and do…*Sophia*
***L*** earning about watersheds-the fun way…*Jessica*
***E*** xciting engineering challenges such as boat making…*Anna*

***S*** mile is all about learning science and math the exciting way…*Emily*
***K*** nowledge to succeed…*Lillian*

## South Kingstown High School

Jo Ann Basel
Diane Wilkens

This year's SMILE club has gotten off to a great start! Having already prepared for family science night, and having been on a fieldtrip, things are going very well.

Our club has grown this semester, and members new and old are enjoying themselves so far. In October, our SMILE club paired with the South Kingstown Middle School SMILE club in a kayaking adventure on the Wood Pawcatuck River. This field trip allowed the two clubs to enjoy each other's company as well as learn about the water shed and ecology of the river. The students enjoyed kayaking and getting to spend time with their friends being active and outdoors, it was a great experience for everyone!

Starting in November, we broke off into groups to prepare for family science night. Each group was given a different aspect of how our school effects the local watershed, and constructed a map detailing the impact. We found the information very interesting, and one group has proposed a solution to one of the problems of the current system. We are excited for the rest of the year, and especially cannot wait for the SMILE challenge weekend in March.

## Horgan Elementary School

Maria DePalma
Amy Horne

The Elementary SMILE group in West Warwick has had a exciting and busy year thus far. In September, our club drove to Central Falls to board the Blackstone River Explorer for a beautiful and informative trip down the Blackstone River. Our guide was very knowledgeable about the river and the history of the entire area. We learned about businesses past and present and their effects on the water. We saw swans, a huge heron, painted turtles, and a kingfisher! It was a perfect fall day for a tour!

All of our students' hard work paid off with an extremely successful Family Science Night. We had a huge, hungry crowd and tables laden with delicious, home-made ethnic dishes and sweet treats. Our students wowed the crowd with professional-grade maps of our school, a very realistic, watershed model, and informative and creative games testing players' knowledge of trees and forestry. We were very proud of their accomplishments.

# Ella Risk Elementary School

Sheryl Wilson
Peggy Boyer

Hi SMILE kid! So far in SMILE we have been learning all about watershed forestry. We have been doing a lot of experiments that we have never done before in our lives! We went to Roger Williams Botanical Gardens and saw all kinds of plants that we have never seen before. We learned how plants grow big if you take care of them, the water cycle, and how important it is to have permeable surfaces to prevent erosion and provide clean water.


**Why we love SMILE…**
…it teaches me more about science and measuring. That makes me smart and thinks about helping the environment. Sewers always have to be clean.
…SMILE I like the math that we do in the beginning when we come to class, and also I love the experiments that we did and I love to learn more science.

**Why I joined SMILE…**
…Also because last year my sister went to SMILE and it was fun, so I wanted to try it. I learned it will get me into a good collage and that's important to me!
…I joined SMILE because it is a science math program and I love science and math.
…I joined smile because I wanted to learn new skills with other people from different classes.

**My favorite experiment was**…
…When we cut an apple and found out the skin is how much clean water there is in the world.
…When we put liquid + solid together and made a gas. The vinegar exploded with the sugar, baking soda, flour and salt. It was the baking soda and the vinegar made the gas. WOW! I never saw this before.
… All of them because they were interesting to me.
I am most looking forward to…
…SMILE family night because I can be the teacher and show my parents the things I have learned since September.
...I am most looking forward to the camping trip and then I will go to collage. I know that SMILE will help me learn enough knowledge so I will be prepared for collage.

We went to Roger Williams Botanical Gardens and saw all kinds of plants that we have never seen before.

# West Warwick Middle School

Eugene Gallo
Christopher Baccei

By Emily-Anne Andersen and Emily Wolfe

Inspecting the school grounds and surveying the area, students create a map showing the pattern of water drainage.

**So far this year…**

We have learned about **watersheds** by researching information and exploring our local environment. We have learned about how watersheds help us and where watersheds are located. Over a period of sessions, we have walked around our school taking measurements and marking things, such as vegetation, sewer drains, and slopes/hills on our maps. We have been preparing this information for family science night as well and will begin preparing soon for our next activities and the URI weekend challenge.

**Roger Williams Botanical Garden…**

While working on watersheds, we took a field trip with the high school SMILE to Roger Williams Botanical Garden. There were different species of plants and trees displayed for us to tour. There was also a small pond full of fish. We were able to stay for only a short period of time, but that was all we needed to enjoy the garden inside!

**Family Science Night Preparation…**

In order to get ready for this big event everyone is working in specific groups. There are 5 groups in all. Every group must prepare a presentation for their topic. When family science night comes each group will present a board with information and will explain their topic. The five groups are focused on watersheds, vegetation, the school map, land use, pollution and traffic patterns, and local animal inhabitants. All five groups are based upon our school, John F. Deering Middle School.

**URI Weekend Challenge…**

Every member from all the middle school SMILEs in Rhode Island go to URI (University of Rhode Island) to do a challenge. Last year, we learned to build wind turbines and how they create electricity. We created our own model turbines and tested the power they gave off. This year, we don't know what we are doing but we hope to have as much fun as we did last year.

CENTRAL FALLS
Ella Risk Elementary School
Sheryl Wilson
Peggy Boyer

Calcutt 5th grade
Karen Cardoza
Lee Karns

Calcutt Middle School
Sarah Peixoto

Central Falls High School
David Upegui
Laura Stanish

NORTH KINGSTOWN
N. Kingstown High School
Karen Finlan

PAWTUCKET
Shea High School
Ann Marie LaRoche
Jennifer Blanchard

Tolman High School
Kevin Collard
Jason Rushton

Slater Junior High School
Michael Gavin
John Martinelli

SOUTH KINGSTOWN
West Kingston Elementary
Debi Vannoy
Cynthia MacNeil

Curtis Corner Middle School
Gina Haberlin
Jo Ann Basel

S.Kingstown High School
JoAnn Basel
Diane Wilkens

WEST WARWICK
Horgan Elementary School
Maria DePalma
Amy Horne

Deering Middle School
Eugene Gallo
Christopher Baccei

West Warwick High School
Eugene Gallo
Nelson DaSilva

WOONSOCKET
Harris Elementary School
Heather Neil
Stephanie Roberts

Coleman Elementary School
Jennifer Paolozzi
Anissa Hoard

Citizens Elementary School
Melissa Moniz
Jodi Cifelli

Woonsocket Middle School (2 clubs)
Paulette Metivier
Denise Fontaine
Lisa Desante
Rania Aghia

Woonsocket High School
Julia Grassini
Ethel Locke

# PARTNERHIPS

Amgen Foundation

Amgen International Network

Amgen Biotech Experience

Amica

Connecting For Children and Families

Eaton Aerospace Foundation

Graphic Expressions

URI Graduate Students Association

Holiday Inn South Kingstown

Lloyd G. Balfour Foundation, Bank of America, N.A Trustee

NOAA B-Wet Program

North Kingstown 21st Century Community Learning Center

Pawtucket COZ-21st Century

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URI Transportation Center

YMCA of Greater Providence

Central Falls School Department

North Kingstown School Department

South Kingstown School Department

Pawtucket School Department

West Warwick School Department

Woonsocket School Department


*SMILE Newsletter*

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*SMILE (Science and Math Investigative Learning Experiences) is an enrichment program for educationally disadvantaged students in grades 4-12 in four Rhode Island communities. SMILE's goal is to provide group activities for these students in math, science and computers. Generous gifts by participating donors make this program possible. The SMILE newsletter is published four times a year. We encourage your comments and ideas. Please share this newsletter with others who might be interested in SMILE.*

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## ONLINE


*www.uri.edu/smile*

*20th Year of service*

## Calendar

Weekly SMILE Club Meetings
Scientific and Career Exploration Field trips

### Family Science Nights

November-December 2013

### Special Annual Events

High School
Challenge Weekend
March 21-22, 2014
URI Kingston Campus

Middle School
Engineering Challenge Weekend
May 2-3, 2014
URI Kingston Campus

Elementary School
Outdoor Science Adventure
April 11-13, 2014
URI Alton Jones Campus

### Teachers' Professional Development Workshops

| December 5, 2013 | May 16 , 2014 | August 11-13, 2014 |
|---|---|---|
| University of Rhode Island | University of Rhode Island | University of Rhode Island |
| Math and science Curriculum<br>Special Events Planning | Math and science Curriculum<br>Special Events Planning | Math and science Curriculum<br>Planning for the year |

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