

Annual Report 2022-2023



Science and Math Investigative
Learning Experiences

The SMILE Program seeks to improve the educational outcomes of underrepresented and underserved students by giving them confidence in their academics and life skills in order to pursue higher education and career opportunities of their choice. Our work supports the University of Rhode Island’s initiatives to achieve the enrollment of a talented and diverse community of students, as well as increase first-year retention of freshmen by focusing on college preparedness of underserved pre-college students who are in grades 4 – 12. Our success is thanks to our dedicated team of SMILE staff members, club teachers/leaders, school administrators, college faculty, graduate and undergraduate students, and community members

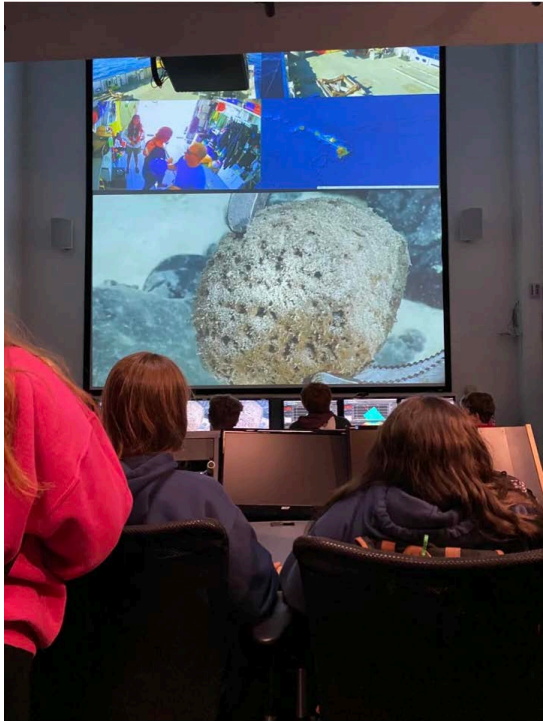


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MESSAGE FROM THE DIRECTOR



Carol M. Englander
Director

Dear friends and supporters of the SMILE Program,

The 29th year of SMILE saw a welcome return continued in person learning despite the presence of new strains of Covid-19 and other viruses. SMILE clubs resumed with some students wearing masks and all once again working in teams, participating in hands-on STEM activities, exploring engineering activities, building three dimensional structures, earthquake seismograph analysis (Dr. Matt Wei's NSF grant), plant and herbivore interactions, off shore wind structures, damage surveillance using drones, and electricity production using wind turbines to mention just a few. Students were so excited to go on field trips which had been curtailed due to Covid-19. Middle and High School students came to the URI Graduate School of Oceanography as part of Dr. Rainer Lohman's NSF grant. They learned about the new RCRV being built for URI to replace the RV Endeavor, carbon pollution identification, ocean sediment analysis, marine life, and marine robotics. As part of Dr. Evan Preisser's NSF grant, all levels of SMILE clubs learned about plants, both native and non-native, and herbivore interactions. Students visited URI's East Farm Demonstration Garden and the Apple Orchard. At the garden, volunteers showed students the edible vegetables and how they protect them from diseases and foraging animals. At the apple orchard SMILE students saw tarps positioned under trees that are used to collect drops that attracted yellow jackets, and also prevent spread of fungal diseases. They got to pick bags of apples for their family and also their local food banks. Students explored the Roger Williams Botanical Center with its unusual indoor and outdoor plantings. Clubs visited Norman Bird Sanctuary, Sachuest Point and Trustum Pond National Wildlife Refuge. The Roger Williams Zoomobile visited some of the clubs, and students learned about raccoons, opossum, and snakes, their habitats, diets, and their environmental impacts. Being able to be up close and touch these animals was quite a positive experience for all.

We have about 350 Rhode Island students participating in the program this year at the elementary, middle and high school levels from six school districts, with students from Central Falls, Newport, South Kingstown, Westerly, West Warwick, and Woonsocket. Our SMILE Annual Engineering and Environmental Challenges were held at URI Kingston campus. SMILE students enjoyed working with students from other schools, and were mentored by URI students, many of whom looked like them. The SMILE students loved being on a real college campus, eating in the dining hall, and beginning to envision themselves as future college students.

Our teacher Professional development workshops were presented in person at URI. Four seniors were awarded a \$500 SMILE college scholarship, inspired by Saul Nulman, a SMILE supporter, who said "Dreams, determination, and discipline will make you succeed." The student's accomplishments make us so proud. The SMILE Program continues to be Rhode Island's only STEM pipeline for helping diverse students develop their identity and competence as scientists in preparation for college. SMILE alumni students select STEM majors at the University of Rhode Island at a 70% rate, well above the national average of about 20%.

SMILE students have even greater positive connections to their school, community and environment through their stewardship projects. These included cleanups around their homes and school yard, making reusable shopping bags, rejuvenating gardens and planting trees.

SMILE staff have been very active in developing new curriculum, and helping teachers implement it in their clubs. The SMILE Board of Directors continue to help with fundraising, and make valuable suggestions for future collaborations with URI faculty.

Your support and efforts on behalf of all our deserving and enthusiastic SMILE students has an incredible positive effect. We appreciate and thank all of you for promoting The SMILE Program and look forward to our 30th year bringing STEM activities to Rhode Island's future workforce.

OUR REACH



CENTRAL FALLS

Ella Risk Elementary School
Calcutt Middle School Central
Falls High School

NEWPORT

Claiborne Pell Elementary
Thompson Middle School
Rogers High School

SOUTH KINGSTOWN

Peacedale Elementary
Curtis Corner Middle School
South Kingstown High School

WESTERLY

Westerly Middle School
Westerly High School

WEST WARWICK

Horgan Elementary School
Deering Middle School
West Warwick High School

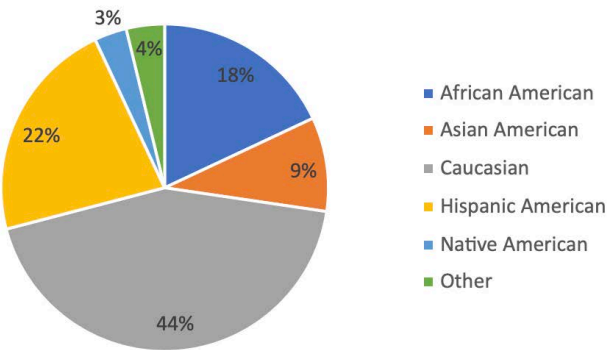
WOONSOCKET

Globe Elementary
Coleman Elementary
Citizens Elementary School
Woonsocket Middle School at
Hamlet
Woonsocket Middle School at
Villa Nova
Woonsocket High School

PARTICIPANTS

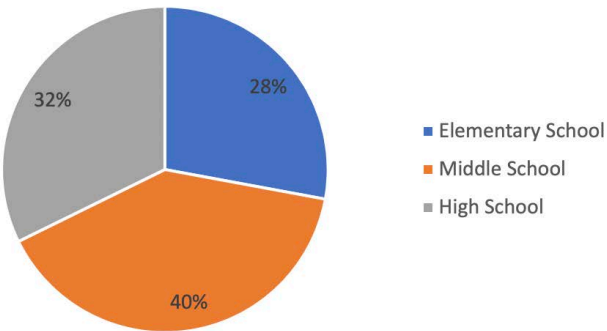
STUDENTS BY ETHNICITY

African American	62	18%
Asian American	32	9%
Caucasian	150	44%
Hispanic American	76	22%
Native American	11	3%
Other Minority	13	4%



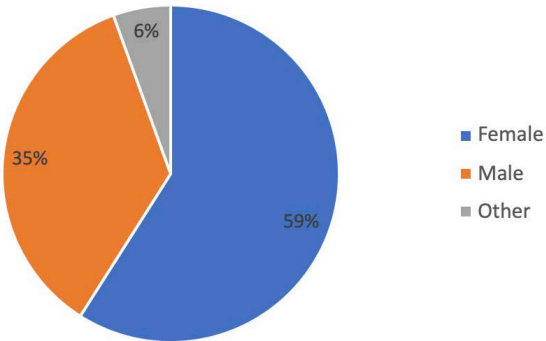
STUDENTS BY GRADE LEVEL

Elementary School	96	28%
Middle School	137	40%
High School	111	32%



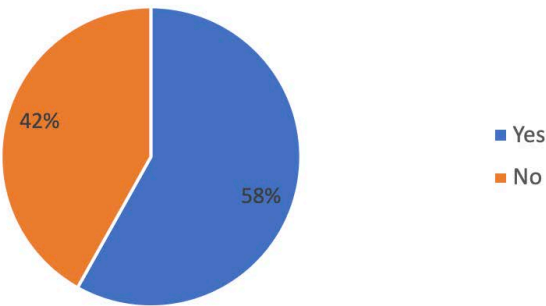
STUDENTS BY GENDER

Female	203	59%
Male	122	35%
Other	19	6%



STUDENTS BY FREE/REDUCED LUNCH

Yes	200	58%
No	144	42%



YEAR IN REVIEW



SMILE Teachers' Workshops

(August and January 2022)

There were two teachers workshops that happened in the year, one in August and the other in December of 2022. In the August workshop, teachers were given presentations as well as supplies to practice the engineering curriculum for Fall 2022. The January Workshop focused on the spring curriculum. There were three sessions held for elementary, middle, and high school. Each included hands-on activities that the teachers participated in in order to best prepare for the upcoming events.

SMILE Career Exploration Field Trips 2021-22

Field-trips included the Roger Williams Botanical Gardens, URI Graduate School of Oceanography, URI's East Farm Apple Orchard, the Norman Bird Sanctuary, and the Sachuest Point Wildlife Refuge. We were thrilled to get our SMILE students back in the field to learn about STEM careers in Rhode Island.



Middle School Engineering Challenge

On March 31st, 2023, students from 7 middle schools across Rhode Island made the trip to URI to partake in the Middle School Engineering Challenge. The challenge presented to the students was to design and build a model of a wind turbine while changing various aspects to see how it affected voltage produced. 95 students were split into 16 teams. There was a ice breaker, followed by the first job of constructing the nacelle for their turbine. They then took a well deserved break to eat lunch, and then it was right back into working to test different six different blade designs. Students learned a lot about wind energy, as well as how mechanical energy is turned into electrical energy, as well as how to work together and work through the engineering design process.



“My favorite part of the SMILE program was the hands-on activities that we were able to work on and I felt that I was more experienced with these subjects and I have more knowledge on the topics.”

- SMILE High School Student

“My child's experience has been very exciting with all that they are learning and using critical thinking and are proud of the project they have done and come up with. Also looking ahead to go to college to major in Engineering. Thank you SMILE!”

-SMILE Middle Student Parent

“I feel good about learning and studying about science and other things in SMILE”

-SMILE Elementary Student

High School Engineering Challenge

SMILE high school students from six RI districts came to URI for the yearly high school engineering challenge. They worked together in 14 teams total split in two to, each with different objectives. Group A was responsible for building and testing a drone programmed with an Arduino Uno, wired to a breadboard, which they had to attach batteries and sensors. Group B built an offshore wind turbine jacket structure with a varying number of bays depending on their group. Dr. George Tsiatis, a URI Professor of Civil Engineering, was there to test the structure using a shake table. Dr. Matt Wei, a URI Professor from the GSO as well as his graduate students, held breakout sessions for the SMILE students, showing them a seismograph used to detect earthquakes, as well as 3D models of earthquake zones. Overall students had a blast and learned important information about earthquakes, jacket structure stability, and how electric sensors and microprocessors enable drones to fly in a controlled setting.



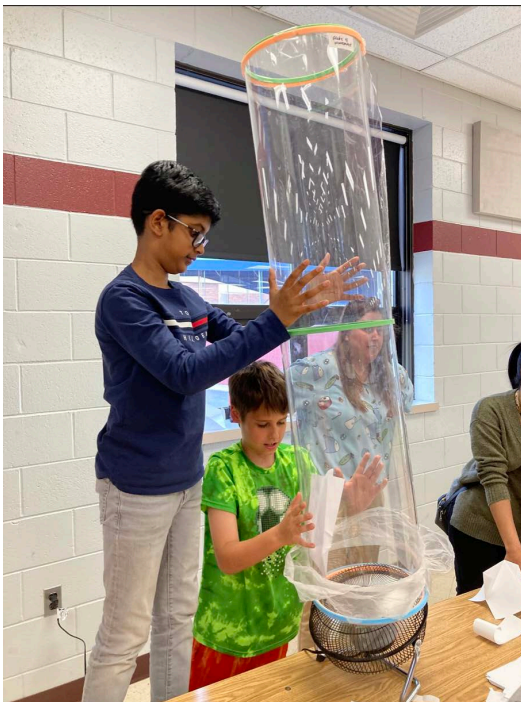
Elementary Ecology Field Day

Seven elementary SMILE Clubs came from all over Rhode Island to URI to participate in the annual Ecology Day. There were four different areas that students visited on the campus, each with their own activities to learn about the environment. The United States Geological Survey(USGS) also attended to teach students about the stream habitat. With their instruction, students collected data related to the pH, temperature, and oxygen levels. Students were also able to learn more about STEM careers. URI students were present at three of the habitats to teach the elementary students. Students made observations on lichen, nurse log ecosystem, macroinvertebrates, soil, and pond plant life. Students were big fans of the day, having fun while learning more about nature.



Family Science Night

In December and March-May, SMILE clubs across the Rhode Island state participated in Family Science Nights. This event brings students, families, friends, teachers, and administrators, and the community all together to experience interactive STEM activities. There were potluck dinners as well as activities taught by SMILE students. Parents are always proud of the accomplishments of the students, and have always expressed delight and surprise to see their children teaching them as they rotated through the stations. It is a great way for students to show off their passion for STEM topics, as well as teaching and building confidence and self-esteem.



PARTNERSHIPS

SMILE Facilitated the Engagement of Industry, University Faculty and College Student Mentors

SMILE Teachers Professional Development Workshops

URI faculty and industry experts made presentations at the Teachers Professional Development and Workshops

Challenge Weekends, Elementary Ecology Field Mentors

National Society of Black Engineers (NSBE)
Natural Resource Science Students
Society of Women Engineers (SWE)
American Society of Mechanical Engineers (ASME)
URI Society of Hispanic Professional Engineers (SHPE)
URI Center for Student Leadership
American Indian Science & Engineering Society (AISES)
Advancing Hispanics/Chicanos & Native Americans in Science (SACNAS)
Tau Beta Pi
Student National Pharmaceutical Association (SNPHA)
College of the Environment and Life Sciences Undergraduate Students
United States Geological Survey, Connecticut (USGS)

SMILE URI partners in pre-college STEM outreach activities.

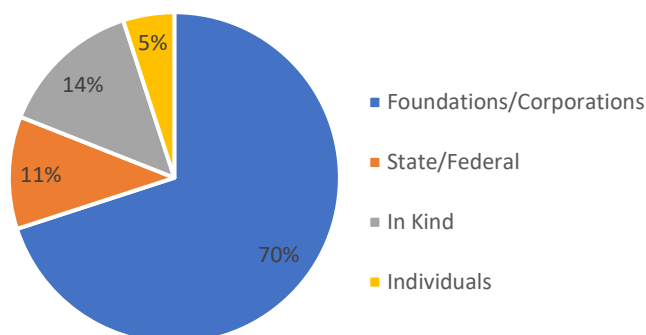
URI Center for Student Leadership Steere Engineering
URI College of Engineering URI Talent Development
URI Graduate School of Oceanography

SPONSORS

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:

AAUW	Red Sox Foundation
Anonymous	Schneider Electric
Amgen Foundation	SPIE
American Honda Foundation	Steere Engineering
Arnold Lumber	Toray Plastics, America, Inc.
The Champlin Foundations	University of Rhode Island
Connecting For Children and Families	van Beuren Charitable Foundation
Constellation, an Exelon company	Verizon Foundation
Cox Charities Trust	
Dominion	Central Falls School Department
Dassault Systemes	Newport School Department
The Gerald Claude Kirby Trust	South Kingstown School Department
Graphic Expressions	Westerly School Department
June Rockwell Levy Foundation	West Warwick School Department
Nordson Corporation Foundation	Woonsocket School Department
Ocean State Charities Trust	
Pfizer	
Ramsey McCluskey Family Foundation	

FUNDING SOURCES



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PROGRAM SUCCESS



COLLEGE ENROLLMENT DATA 1994-2022

Source: College Enrollment by Participants in The SMILE Program
1998-2022 URI Office of Institutional Research

1. Since its founding in 1994 to 2022, 4723 students have participated in The SMILE Program.
2. The high school graduation rate for students that participated in SMILE for one or more years is between 90% and 100%.
3. The college enrollment of students who we were able to track using the National Student Clearinghouse is 67%. In 2022, 70% of all SMILE students who graduated immediately enrolled in college. Among low income students only 44% immediately enroll in college (2014 RI Kids Count Factbook).
4. Since 1998, former SMILE participants who graduated high school have attended 379 different colleges and universities with locations in 36 different states plus the District of Columbia and Puerto Rico.
5. Between 1998 and 2022, 567 SMILE alumni have enrolled at URI and 86% pursued STEM majors.
6. In 2022, 156 SMILE alumni enrolled at URI, 86% of them are in STEM majors (Note: only 20% of all US college undergraduates are enrolled in STEM according to a US Dept. of Education Report).
7. For students in SMILE for three or more years, the ratio of students attending college versus those who did not attend college is approximately 2:1.
8. 100% of the students in SMILE for more than 7 years went to college.
9. In 2021, 128 students who were in SMILE graduated high school.

The SMILE Program congratulates all SMILE seniors class of 2023, and wishes them success in their academic and professional careers.