

# THE SMILE PROGRAM

Science and Math Investigative Learning Experiences

UNIVERSITY OF RHODE ISLAND



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Annual Report  
2011-2012



## WHAT WE DO

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. With a dedicated team of SMILE staff members, club teachers/leaders, school administrators, college faculty, graduate and undergraduate students, and community members, The SMILE Program experienced another successful year.

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## MESSAGE FROM THE DIRECTOR

CAROL M. ENGLANDER

### *The SMILE Program Continues to STEM the Tide of Science Dropouts*



To our partners, supporters, mentors, and friends:

The SMILE Program has just completed its very successful 18th year serving 362 underrepresented students in six school districts and 29 teachers. We know that our after school STEM academic program continues to have a positive impact on our students.

- The number of our SMILE graduating seniors is 23
- 20 SMILE seniors have been accepted into college
- 14 or 70% of those students are majoring in STEM disciplines. 2 students are undecided about going to college, and 1 student will enter the Navy.

#### **SMILE Alumni at URI**

SMILE alumni at URI have gone on to achieve great academic success. With the assistance of the University of Rhode Island (URI) Office of Institutional Research we have determined:

- At URI there are currently 72 SMILE alumni undergraduates and 73% are in STEM majors.
- 13 SMILE alumni college students graduated URI this May with degrees in engineering, biological sciences, neuro sciences, microbiology, animal science, communications, environmental science and management, film media, music composition, and psychology. One student has been accepted to medical school (data is still coming in on other universities SMILE graduates).

#### **Mentoring leads the way!**

We continue to involve corporate partners as mentors in our Annual Challenges and as sources for career oriented field trips. They motivate SMILE students as well as URI mentors. Employees of Amgen, Toray Plastics, America, Schneider Electric, Eaton Aerospace, NOAA Corps, FarSounder, and NUWC have participated through their company's community outreach programs, as has the RI Department of Transportation employees. This gives students an added dimension of career exploration during our high school biotechnology challenge and middle school crane and magnetic levitated train building challenge. We also have partnerships with the URI Center for Student Leadership which involves undergraduates in a variety of college majors as SMILE mentors, National Society Black Engineers Society (NSBE), and the Society of Women Engineers (SWE), American Society of Mechanical Engineers (ASME). 17 URI students took the 3 credit URI course PLS/NRS 492 SMILE EOSA field Study Project

#### **Supporting the Path Forward**

Your support of The SMILE Program is helping to reverse the trend in the U.S. of only 15% science and engineering undergraduates compared to other countries with percentages between 38% and 67%. SMILE is making a difference and with your support and additional funding opportunities, we will continue to expand and fulfill the wish of one SMILE student: "SMILE belongs in every school in every state".

Your efforts and support of our SMILE students and teachers are greatly appreciated. We continue to be impressed by all SMILE alumni persisting and graduating from college, most of them in four years.

Sincerely,

A handwritten signature in cursive script that reads "Carol Englander".

# OUR REACH

## SCHOOLS

The SMILE Program served 362 students in 16 schools across Rhode Island

### CENTRAL FALLS

Ella Risk Elementary School  
Calcutt Middle School  
Central Falls High School

### NORTH KINGSTOWN

N. Kingstown High School

### PAWTUCKET

Slater Junior High School  
Shea High School

### SOUTH KINGSTOWN

West Kingston Elementary  
Curtis Corner Middle School  
S.Kingstown High School

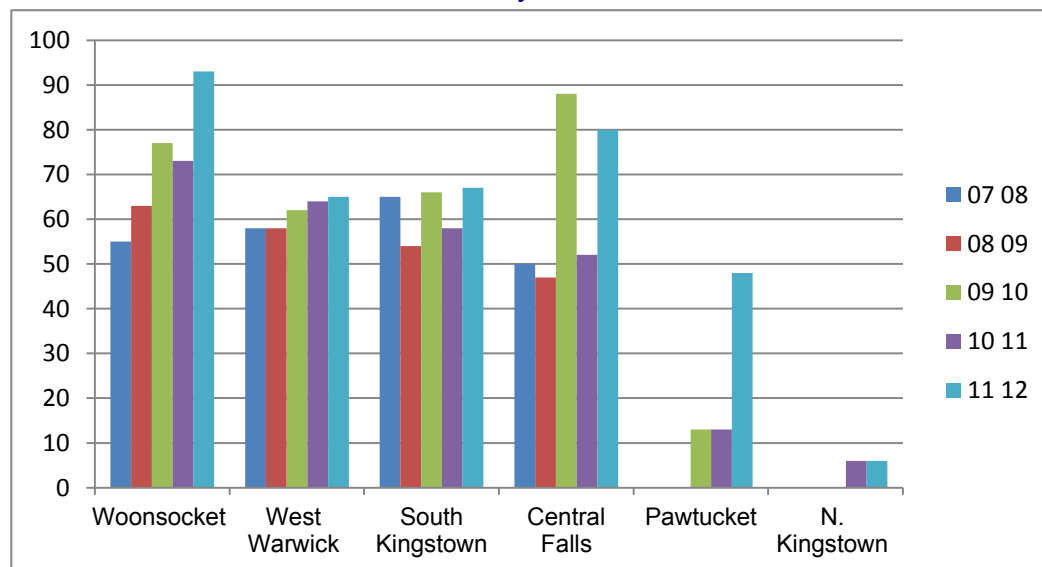
### WEST WARWICK

Horgan Elementary School  
Deering Middle School  
West Warwick High School

### WOONSOCKET

Harris Elementary School  
Coleman Elementary School  
Woonsocket Middle School  
Woonsocket High School

## NUMBER OF PARTICIPATING STUDENTS BY SCHOOL DISTRICT Last 5 years



**\*2011-12 Woonsocket and Pawtucket opened new clubs**

## 2011-12 PARTICIPANTS AND CONTINUING STUDENTS

### Number of Students by School Levels

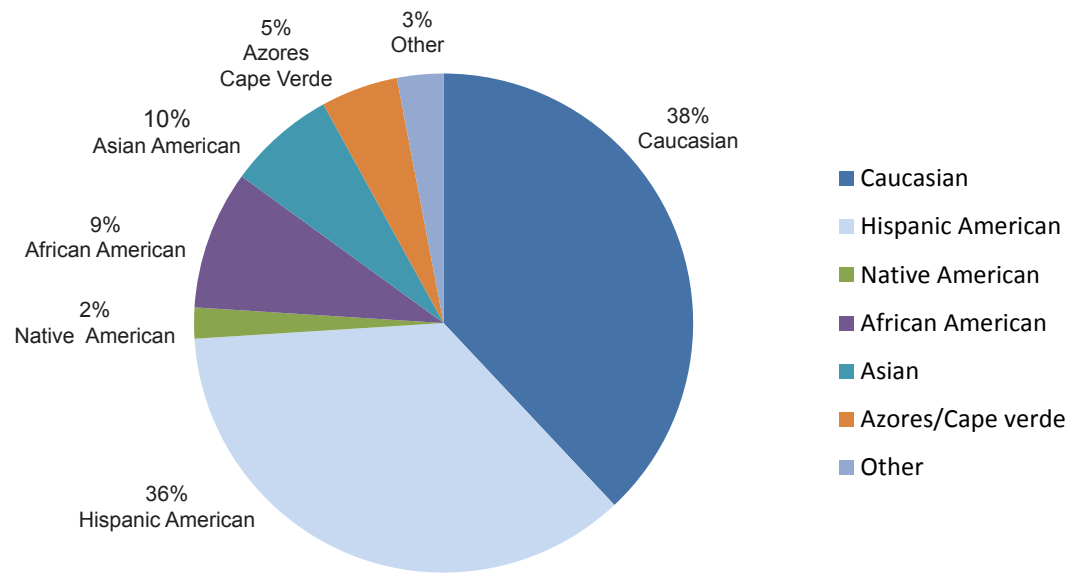
Elementary School	119
Middle School	123
High School	120
<b>TOTAL</b>	<b>362</b>

Students who have been in SMILE 2 years or more

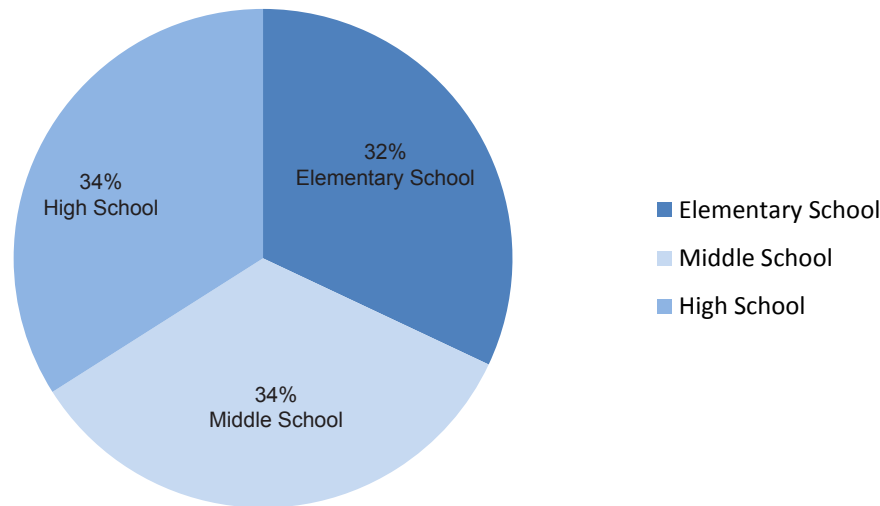
### Returning Rates by School Levels

Elementary School	27%
Middle School	37%
High School	36%

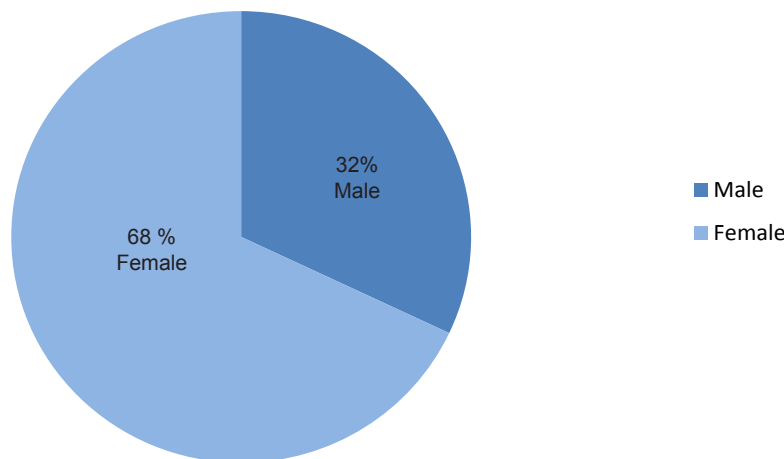
Ethnicity



Grade Level



Gender



# YEAR IN REVIEW



**After-school Clubs-**This year SMILE clubs completed the Watershed curriculum, and the pre activities for the annual challenge events.

**Teachers Professional Development-** Three Workshops introducing science concepts and career opportunities to bring back to students

**Family Science Nights-** Students from all levels presented interactive hands-on science activities for family members to try. In each district the event was well attended by students and their families. Also, some school administrators and community members were present.

**SMILE Community Day of Action-** Rain garden Central Falls Chocolate Mill Overlook project; Rain garden Pawtucket New Urban Farmers; South Kingstown High School labeled storms water drains; Woonsocket planted in an existing rain garden.

**Elementary Outdoor Science Adventure-**The event was focused on hands-on, field-based biology and environmental science designed by URI college students. This year, students became herpetologists, hydrologists, environmental scientists and consultants, entomologists, and biologists as they rotated through the field studies.

**Middle School Engineering Transportation Challenge Weekend-**Students came to URI campus to design, build and test a maglev train and a tower crane capable of lifting the train onto a magnetic track

**High School Engineering Challenge Weekend -**Students was tasked with building an underwater remotely operated vehicle (ROV called a SeaPerch) with an attached undewater camera in order to identify and retrieve “ghost lobster pots” (5-gallon buckets) from the bottom of the “ocean” (URI pool) that were of varying weights.



**Field trips**-Watershed club field trips, GSO, Amgen, Kettle Pond, Alton Jones Campus, Camp Champlin, Audubon Society

**Beginning of the year Field Trips** – Elementary students visited the Kettle Pond Visitor's Center in Charlestown and high school and middle school student visited Lake Eisenhower at Alton Jones to kick-off the year, meet other SMILE friends, and get started with the watershed theme.

**Amgen Field Trip** – Amgen hosted another field trip for the SMILE high school students. The content of the visit was related to environmental science to align with the watershed theme that students were studying. Students heard from employees from the Environmental Health and Safety (EH&S) department, toured the facility, and took part in a teambuilding challenge, all run by the enthusiastic employees of Amgen.

**Tech Collective's "STEM in the Middle" Career Expo** – SMILE director and assistant director presented two workshops at the "STEM in the Middle" Career Expo at Rhode Island College in December, which was organized by the Tech Collective. The event sought to increase STEM awareness and interest at the middle-school level through a full day of hands-on workshops for girls.

**Rhode Island College STEM Center conference** – EmpowerIng for the Future. Director presented The SMILE Program to conference participants as part of the all-day conference involving educators and businesses.

**RELAAY Grant** – SMILE is part of an Office of Higher Education grant that the University of Rhode Island received through Talent Development. The RELAAY Grant, or Recruit and Educate Local At-Risk Adults and Youth, has the goal of supporting and retaining the number of RELAAY Project participants, which includes SMILE alumni who are both talent development and non-talent development students, at URI. SMILE students attending URI will be joined by students from College Crusade, College Visions, and Educational Talent Search, who are all the main beneficiaries of the grant.

**URI STEM Student & Corporate Volunteer Luncheon** – At this year's High School Engineering Challenge Weekend, the Student Affairs Diversity Fund funded a URI STEM Student and Corporate Volunteer luncheon. The event was for URI students, including members of NSBE, SHPE, and SWE, to network, ask questions, and learn from Rhode Island industry mentors from Amgen, Toray Plastics, Eaton Aerospace, Schneider Electric, and NUWC (Naval Undersea Warfare Center).

**GSO Field Trip** – High School SMILE students took a field trip to the Graduate School of Oceanography (GSO). Phil Veillette, Academy Director of EPSCoR, and Tim Pelletier, Biotechnology and STEM/STEAM Outreach Coordinator for EPSCoR, helped to organize and recruit expert volunteers. At GSO, students tested their ROVs in Narragansett Bay, captured phytoplankton, collected water samples to do bacterial counts, and used a YSI device to collect water data.

**Wood-Pawcatuck Watershed Association Partnership** – Denise Poyer at the Wood-Pawcatuck Watershed Association has helped out SMILE Program students a great deal this year, particularly through lending out waders for SMILE students to investigate their watersheds.

**Watershed Stewardship Project** – During the last few weeks of the SMILE year, students planned and implemented a Watershed Stewardship Project. Central Falls students planted a rain garden at the corner of Roosevelt Avenue and Charles Street in Central Falls as part of the Chocolate Mill Overlook project. South Kingstown students installed permanent identification of storm drains around the high school. Woonsocket students cloned plants and transferred them to an already existing rain garden. Pawtucket students made a vegetable garden with the "New Urban Farmers".

**Schneider Electric's Day of Action** – Schneider Electric not only funds The SMILE Program, but their employees also volunteer their time. They had another successful Day of Action at Alton Jones on May 24<sup>th</sup>, where volunteers painted picnic tables, stacked wood, and planted flowers. There is no better place in the world than Alton Jones for SMILE's annual Elementary Outdoor Science Adventure.

**URI's Center for Student Leadership Partnership** – The URI Center for Student Leadership has been a valuable partner for many years now. This year, a limited number of scholarships will be offered to SMILE students to attend The First-Year Student Leadership Institute during the summer.

**URI/SMILE Courses** – SMILE Staff instructed a spring-term course (NRS/PLS 492) for URI students facilitating the EOSA. SMILE staff also created a three credit course for SMILE teachers (EDC 923)

# PARTNERSHIPS

SMILE facilitated the engagement of industry,  
university faculty and students mentors



## SMILE Teachers Professional Development Workshops

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

## Challenge Weekend and Elementary Outdoor Science Adventure Mentors

NUWC (Naval Undersea Warfare Center)  
Amgen International Network  
Eaton Aerospace  
NOAA Corps  
Toray Plastics  
FarSounder  
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

## SMILE URI partners in pre-college STEM outreach activities.

URI Transportation Center  
URI Center for Student Leadership  
URI College of Engineering  
URI Chemistry Department  
URI Collaboration for Exploration in Mathematics and Science (CEMS)  
URI Watershed Watch  
EPSCoR



# SPONSORS

*The SMILE Program gratefully acknowledges the following sponsors for their support*

## Corporations and Foundations

Amgen Foundation  
 AMICA  
 Arnold Lumber  
 Eaton Aerospace Foundation  
 Dominion Foundation  
 General Dynamics  
 Graphic Expressions  
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 Houghton Mifflin Harcourt  
 Jewish Community Fund  
 MetLife  
 Ocean State Charity Fund  
 Ramsey McCluskey Foundation  
 Schneider Electric  
 Toray Plastics (America), Inc.

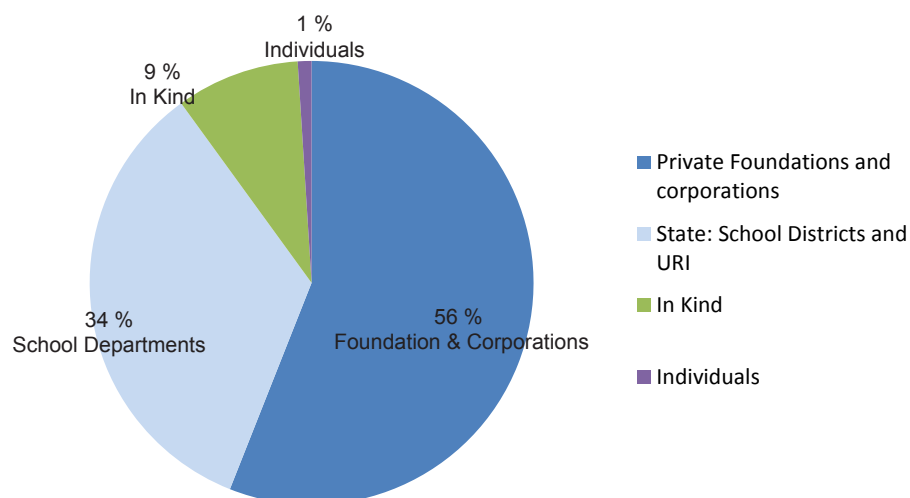
## School Departments

Central Falls School District  
 North Kingstown School District  
 South Kingstown School District  
 West Warwick School District  
 Woonsocket School District  
 21st Century Comm Learning Center, North Kingstown  
 Pawtucket COZ-21 sr Century

## University of Rhode Island

URI Amgen Bruce Wallace Biotechnology Lab program  
 URI Transportation Center  
 URI College of Engineering, Diversity Committee  
 URI Student Affairs Diversity Fund

## Funding Sources



## SUCCESS STORIES

David Hernandez  
Central Falls High School  
Valedictorian Class of 2012



### Brown University Medical School

David Hernandez came to the United States four years ago from Medellin, Colombia. In that four years, he has accomplished so much. David is valedictorian of his class at Central Falls High School and was accepted into Brown University's class of 2016 and the Program for Liberal Medical Education (PLME), which ensures him a spot at Brown's medical school. David was accepted into a total of eight universities, including URI, RIC, PC, BC, BU, Tufts, Brandeis, and Brown.

David was very active in high school, taking advantage of every learning opportunity. He was a member of SMILE for all four years of high school, a member of the school's national chess team, and was part of the Science Olympiad Team which won the state championship in anatomy and physiology.

David takes nothing for granted. He is appreciative, passionate, humble, and kind. His goals to help people and make the lives of others better as a doctor tell much about his nature. He has made so many people proud and will continue to do so.



Ahmed El-Araby  
West Warwick High School  
Class of 2008

URI Biology 2012  
*Summa Cum Laude*  
2012 University Academic Excellence Award

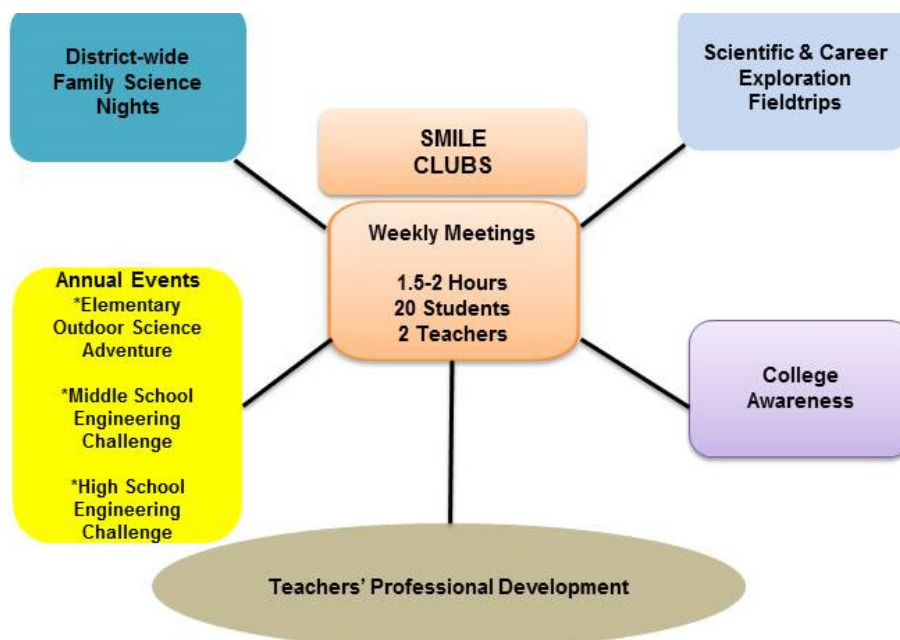
Ahmed El-Araby started SMILE as a freshman at West Warwick High School and continued through all four years of high school. On May 18<sup>th</sup>, Ahmed graduated with summa cum laude honors in Biological Sciences from the University of Rhode Island with a 4.0 grade point average and a 2012 University Academic Excellence Award. Ahmed now plans to pursue his dream to become a doctor. He was accepted to several schools of medicine including his first choices. He will attend Boston University Medical School.

Throughout Ahmed's four years at URI, he consistently volunteered at the SMILE annual events when middle and high school students come to URI as a way to give back to his community and share his experiences of getting into college and being a successful college student. Ahmed was also a Biology Tutor for the Academic Enhancement Center assisting students with difficult concepts.

## STATISTICS HIGHLIGHTS

With help from the URI Office of Institutional Research we have analyzed our data base consisting of over 2000 students. The results, shown below, confirm that SMILE has been able to increase students' interest, motivation, and attitudes toward college and selection of STEM careers.

- Since its founding in 1994, over 2000 students have participated in URI SMILE.
- The high school graduation rate for students that participated in SMILE for one or more years is between 97% and 100%.
- Since 1998, SMILE graduates have attended 88 different colleges and universities.
- Between 1998 and 2010, 95 SMILE alumni have enrolled at URI and 60% pursued STEM majors
- This year 73 SMILE alumni are enrolled at URI and 73% of them are in STEM majors. Note: only 14% of all U.S. college undergraduates are enrolled in STEM according to a 2009 US Dept. of Education report.
- SMILE student college enrollment compared to the RI Low Income College Participation is 2:1
- For students in SMILE for three or more years, the ratio of students attending college versus those who did not attend college is 4:1.
- 100 % of the students in SMILE for more than 7 years went to college.





## Board of Advisors

Marilyn Cohen  
North Kingstown  
Town Planner, retired

William Horan  
CPA: Horan and Golden, Inc.  
Wakefield RI

Fred Frostic  
USAF, retired

Domenic Valentino  
URI Psychology Professor, retired

Malcolm Spaulding  
URI Ocean Engineering Professor  
and ASA Inc. CEO

John Peterson  
URI New media  
Communications and Marketing

Glenda Kirby  
Home Fabrics, Inc NC and RI,  
Retired

Larry Bernard  
Amgen, Human Resources

## SMILE STAFF

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Program Coordinator  
Evaluations

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