

Introducing Kids To Hands-On Science

ReSET Generates Greater Interest In Science and Math Among East of the River Students

BY STEPHEN LILIENTHAL

Richard Repplier came to Malcolm X Elementary School on Alabama Ave., SE in Congress Heights on a recent cloudy Wednesday morning. Peering into an open classroom, bedlam was erupting, with kids dashing about and talking loudly.

But it's okay. The students are stretching a cable that, when connected to speakers, will make a telephone.

Repplier looks on with pleasure. A 73-year-old electrical engineer, who will drive 70 miles roundtrip for six consecutive weeks from his home in Centreville, VA to Malcolm X, is providing demonstrations of "hands-on science" to the school's 5th graders.

"It works," says Repplier, as he watches the children speaking into the homemade phone. "I've shown them something they like. There'll be a lot more."

Minutes later, Repplier shows the students how to make a buzzer.

Two students stand out. A boy answers a question confidently. Another, a girl, accurately diagrams the buzzer.

Repplier admits past classes he's taught have been more orderly before adding, "These kids need science the most. I see a whole lot of intelligence and curiosity in them."

ReSET's Mission

Repplier is a volunteer with ReSET, a non-profit whose mission is to introduce elementary school children to hands-on science, math and technology. Repplier calls ReSET "a beneficial Trojan Horse. We go into classrooms and under the guise of showing the kids fun games, and release magical elves who turn the kids onto science (we hope)!" Hands-on is the essence of ReSET with good reason.

Take Repplier. At age 10, he liked playing with bells, batteries, and lights, seeing how he could make something that rang or lit up. That interest helped to propel him toward a lucrative and interesting career.

John Meagher, executive director of ReSET, a retired director of the Wet-

lands Division of the Environmental Protection Agency, thinks ReSET is important because many children have never met a scientist or engineer and, unlike in some suburban schools, many DC elementary schools lack labs that encourage hands-on experiments.

ReSET's volunteers believe children at age 10 are more likely to become interested in science and technology by performing experiments and building devices than by listening to classroom lectures or by reading textbooks.

Careers in Science

Policymakers are expressing concern that maintaining America's edge in the sciences is increasingly difficult.

A congressionally-requested report issued by the National Academy of Sciences (NAS) in 2005 called "Rising Above the Gathering Storm: Energizing and Employing America for a Brighter Economic Future" cautions, "The domestic and world economies depend more and more on science and engineering. But [United States] primary and secondary schools do not seem able to produce enough students with the interest, motivation, knowledge, and skills they will need to compete and prosper in the emerging world." Improving science and mathematics education and igniting greater interest among children in math those disciplines were two steps the report advocated.

A followup report by NAS," Expanding Underrepresented Minority Participation:

America's Science and Technology Talent at the Crossroads," emphasizes the importance of greater minority participation in the sciences and engineering, which are expected to be fast-growing fields for employment opportunities.

Nor do all jobs in science and technology require advanced degrees. The U.S. Department of Labor's Occupational Outlook Handbook online 2010-2011 edition says a biological science technician averaged nearly

\$40,000 working for the Federal Government in 2009. Such a position often requires a bachelor's degree.

But to start, kids like those living East of the River will need their interest kindled.

ReSET At Work

ReSET was started by Dr. Harold Sharlin in 1988 when he was seeking to combine two passions -- improving science education and developing new opportunities for older citizens. Sharlin remains active with ReSET, currently working to expand scientific knowledge among pre-K students.

During the 2010-2011 academic year, ReSET, bolstered by participation from 61 current and retired scientific and engineering professionals, was able to present programs for 1,676 students in 28 schools in the Greater DC area, including four schools in southeast DC. This academic year, ReSET is staging programs at Malcolm X Elementary and Patterson Elementary in SW DC.

A typical program conducted by ReSET consists of six classroom sessions. Students have the opportunity to try hands-on experiments. Some classes are able to take field trips too. For instance, Meagher, who also instructs, has taken students for science cruises on the Anacostia to test water quality and to identify species of fish.

Matt Blakely, director of Motorola Solutions Foundation, compliments ReSET for reaching "underrepresented students" in science and technology by presenting programs that will allow "scientists and engineers to share their expertise directly." Kelly Balthazor, director of community relations for US Airways, credits ReSET's volunteers for providing students with "positive, enjoyable, and interactive experiences with science and math while



ReSET Volunteer Peter Mehravari works with students on a robotics experiment. The students are visiting the U.S. Patent and Trade Office on a field trip.

serving as role models for the student and the teachers."

ReSET Volunteers

ReSET volunteer Christyann Pulliam, Supervisory Patent Examiner at the United States Patent and Trade Office, has instructed for ReSET at the J.G. Whittier Education Campus in northwest DC. "The principal, [Science, Technology, Engineering, and Mathematics] coordinator, and the teachers have been very welcoming and supportive. ReSET works a little differently at Whittier in that Pulliam is not a solo volunteer instructor but part of a team of volunteer instructors, making it easier to provide more personalized guidance to 3rd and 4th grade students attempting to undertake the experiments.

"It is wonderful to see the kids having fun doing math and science without realizing that they are actually learning," says Ms. Pulliam, an attorney. She credits her father, who works in Information Technology, with arousing her interest in computers.

Ms. Pulliam had majored in computer science and political science in college and had worked as a software developer. She stresses, "The hands-on nature of the experiments lets the [students] know they are capable" of learning more about science and mathematics.

Pamela Wise-Martinez, Chief Architect at the U.S. Department of

Energy's National Nuclear Security Administration, makes it a point to feature African-Americans and women and their accomplishments in science in presenting ReSET programs to students at Mattaponi Elementary in Upper Marlboro, Maryland.

Ms. Wise-Martinez's interest in science and technology harkens back to her childhood when she became "fascinated" by the workings of remote controls for television sets, eventually leading her to earn a master's degree in Engineering and Technology Management from George Washington University. She holds a patent in Secure Biometric Financial Transactions.

Ms. Wise-Martinez recalls the students' effort to create a battery using copper, vinegar, tin, and a miniature lamp. It took two sessions to produce one that worked. When it finally worked, recalls Ms. Wise-Martinez, the students were pleased with their creation. "I love to see their faces when they discover something that relates to everyday living."

ReSET's Results

ReSET's own surveys of students find students who have received instruction by ReSET volunteer instructors exceed the national average in their views of science as measured by the National Center for Education Statistics' "National Report Card." Only two-thirds of American students say they like science. But 85% of students who have received ReSET instruction like it.

Not only do students learn more about science, they do get invaluable lessons about how professionals prepare for their careers, conduct their work, and the importance of persistence and curiosity. Not every student will become a scientist or engineer but sparking awareness about the larger world is what helps to make ReSET a successful program.

For more information on ReSet, or on how you can volunteer, go to www.resetonline.org.

Stephen Lilienthal is a freelance writer in Washington, D.C. ●

SHAKESPEARE'S
THE BARD'S BASH AT THE FOLGER
BIRTHDAY
OPEN HOUSE

SUNDAY, APRIL 22
NOON - 4PM

A free family event with entertainment, crafts, games, swordfights, special tours, and birthday cake for all!

Folger SHAKESPEARE LIBRARY
 201 East Capitol Street, SE (On Capitol Hill)
www.folger.edu

Let's PLAY!

CAMPacyop

June 25, 2012 - July 6, 2012
Ages 5 - 14
Elementary Music Day Camp
String Camp & Band Camp

DC Youth Orchestra Program
 1700 E. Capitol St. NE, Washington DC 20003
www.dcyop.org
 202-698-0123

REACH 4 SUCCESS
 COLLEGE IS WITHIN YOUR REACH!

College Info Center

Providing highschool students, parents and adult learners with integrated college and graduate education assistance
 college applications, financial aid, advising and academic tutoring

Main Programs:
 Get Financially Fit for College – Helps families of middle school students develop a comprehensive college preparation plan.

The Financial Aid Roadmap – Based on the principle that the right information at the right time is a critical component in helping families understand the financial aid process and access all of the resources available to help them to pay for postsecondary education.

Newly Added: Loan and Debt Management Series

Call 202-442-8398
 visit us online www.reach4success.org
 Conveniently located in the MLK JR. Library
 901 G St., NW – Rm. 324, WDC 20001

Now Now Enrolling for 2012-2013 School Year Grades Preschool - Kindergarten

Program Features:

- Before Care and After School Care program.
- Small classroom size and well trained staff.
- Individual planning for each student.
- Hands-on and project-based curriculum.

Now accepting Applications for the 2012-2013 school year. Applications accepted January 1, 2012 – April 17, 2012. Applications received after April 17 will be placed on our waiting list. Applications are available at the school or on our website, www.bridgespcs.org.

Grades served for the 2012-2013 school year preschool - kindergarten.

Age eligibility:

- Preschool - 3 yrs. old by September 30th
- Pre-k - 4 yrs. old by September 30th
- Kindergarten - 5 yrs. old by September 30th

OPEN HOUSE / INFORMATION SESSIONS AT THE SCHOOL ON THE FOLLOWING THURSDAYS:

April 12 from 9:30 a.m.-10:30 a.m.
 May 3 from 9:30 a.m.-10:30 a.m.
 June 7 from 9:30 a.m.-10:30 a.m.

Bridges Public Charter School
 1250 Taylor St. NW
 Washington, DC 20011
 p. 202 545-0515
 f. 202 545-0517
www.bridgespcs.org

Bridges Public Charter School is free and open to all DC residents. Tuition paid by non-residents.