

# ReSET ANNUAL REPORT

2013



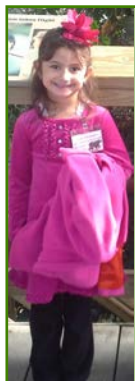
*ReSET is a Washington, DC-based volunteer organization composed of retired and working scientists and engineers whose mission is to motivate children to discover and explore the worlds of science, math, and technology, and to encourage them to consider future careers in these fields. Through experiments, hands-on science lessons, and field trips, ReSET volunteers teach children in ways that are engaging and relevant, helping them to make important connections between life and learning.*



Designated by the Catalogue of Philanthropy as  
"One of the best small charities in the Greater Washington region."

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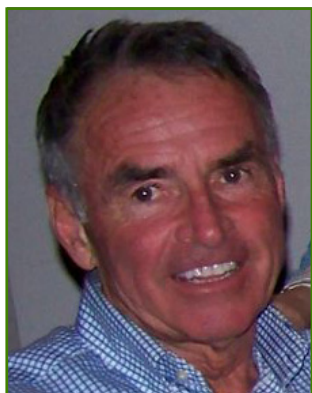
## ***The ReSET Volunteer Commitment***

ReSET volunteer Bob Hauptmann had wanted to teach younger children for a long time, so after nine years of volunteering in 4<sup>th</sup>-grade classrooms, Bob began to work with a Kindergarten class at Georgian Forest Elementary School in Montgomery county in spring 2013. Bob feels he can have a bigger impact with younger learners. “First and foremost, I want the children to enjoy what we do,” he stresses. “I try to use toys, games, props, and explanations in a way that is age appropriate. I want the children to be excited, to be eager to learn more about science, and to look forward to more activities. It is my hope that, if they are having fun, their curiosity will be stimulated.”

The term at Georgian Forest ended with a field trip to the National Aquarium in Baltimore. “My kindergartners had a blast at the National Aquarium with Bob Hauptman,” wrote teacher Nsombi T. Brown. “We are grateful to ReSET for funding the field trip. The exhibits were great. I left wanting to plan a family trip for my daughter.” In fall 2013, Bob tackled his first PreK (ages 4 & 5) class at a Head Start school, where he and the children are covering fossils, sound producers, and magnets.

# The Year in Highlight

## *A Message from the Executive Director*



In 2013, marking its first quarter century in local schools, ReSET cast a warm look back at the past and set its sights eagerly on the future. Appearing on the dais at our snowstorm-deferred 25<sup>th</sup> anniversary event in April were Larry Mirel and Harold Sharlin, both of whom were present at ReSET’s inception in 1988. Harold not only founded ReSET, but continues today as its Chief Executive Officer and manages ReSET’s groundbreaking science program for Pre-Kindergarten students. As part of the anniversary event, renowned scientists Dr. Anthony Fauci and Dr. Nancy Grace Roman gave presentations tracing the trajectory of science over recent decades and into the years ahead. ReSET students and their volunteers brought energy and enthusiasm to the proceedings by demonstrating hands-on science activities for the attendees.

In 2013, ReSET also strengthened its foundation for future success. Having been designated “One of the Best Small Charities in the Greater Washington Region” by the Catalogue for Philanthropy, ReSET expanded its fundraising operations and received grants from a number of new contributors. The Board of Directors welcomed new members Keegan Caldwell and Anya Jones, who bring the perspectives of a younger generation of scientists, engineers and educators. New volunteer partnerships were formed with the National Science Foundation in Arlington, Virginia, and the National Institutes of Health in Bethesda, Maryland. School partnerships were formed with Drew, Barrett, and Hoffman-Boston in Virginia, and Watkins, Barnard, The Lab School at University of DC, Sunshine Early Learning Center, and Big Mama’s Children’s Center in DC.

The shape of ReSET’s volunteer cadre is changing. Five years ago, ReSET had a relatively stable group of 15 retired volunteers. In school year 2012/13, 87 volunteers, many of whom are in college, post-graduate study or in the early years of their careers, were in ReSET classrooms. With frequent job and geographic moves among this group, ReSET has a higher rate of turnover in our active volunteer corps. One of the best things about being ReSET’s Executive Director is meeting and working with these caring people, including the original 15 and every new recruit, all of whom generously give their time and talents to their communities and their professions. Many thanks, volunteers!

—John Meagher



### ***The Catalogue for Philanthropy: Greater Washington***

selected ReSET for inclusion in its 2012–13 Catalogue. A panel of more than 100 expert reviewers from area foundations chose ReSET from a competitive field of nearly 220 candidates; ReSET is one of 74 selected for inclusion. “Charities were selected for excellence, cost-effectiveness, and impact,” Harman said. “These are certainly among the best community-based nonprofits in the Washington region.”

# New Initiatives

## Core School Partnership Program



A Cora Kelly Elementary School student waits to begin a balloon experiment on gravity and force.

You have to be grounded to handle 75 third-graders at one time, but then again, the science lesson was on gravity. Mechanical Engineer Juan Valentin and 13 other volunteers from the US Patent & Trademark Office’s Society of Hispanic Professional Engineers (SHPE) descended on Cora Kelly elementary school in Alexandria, VA in October 2013 with parachutes, balloons, and a great deal of infectious energy.

Cora Kelly is the first school to join ReSET’s new Core School Partnership initiative, which presents ReSET programs to students at multiple grade levels as they advance through school. The program also seeks to more closely link volunteers and programs to science standards of learning, and to reach out to parents and guardians. ReSET Executive Director John Meagher explains, “Ultimately, Core School Partnerships will enable ReSET to compare our students’ science standardized test scores with those of students who have not experienced ReSET programs. This will provide valuable information on science achievement by ReSET students to supplement our current assessments of student attitudes toward science.”

***“Our children rely on ReSET programs to give them a sense of hope and purpose.”***

**—Brandon Davis**

A couple of years ago, Juan contacted John about the possibility of establishing a ReSET program at Cora Kelly Elementary, which has a high Hispanic enrollment. The two of them then met with Principal Brandon Davis, who was very enthusiastic about the program and decided that the first ReSET sessions would be for third graders. Last June, after some positive feedback, Davis asked if ReSET would provide volunteers for other grade levels. This prompted discussions on the possibility of Cora Kelly becoming a Core school. This year, ReSET will also be delivering programs to first graders, and other grades will be added over time.

Mr. Davis, who has worked in the Fairfax County school system since 1996 and as a Principal at Cora Kelly since 2008, sees ReSET as a positive addition to the school’s science and math programs: “The kids really enjoy it and the teachers are glad to see that what the students are learning is being applied authentically, in more practical ways.”

Juan Valentin, who was not in the least intimidated by so many excited students and characterized the experience as “great fun,” thinks the Core School program is an important opportunity for schools to cultivate student interest in STEM. “To follow students from kindergarten through fifth grade, fascinating and engaging them with simple yet enjoyable science and engineering activities, plants a seed of curiosity that hopefully will end with a career in a STEM field.”

Juan and his fellow scientists provide something else that is a crucial aspect of ReSET’s mission—they serve as role models for minority students who may not get much of a chance to see science professionals in their own communities. Says Davis, “It’s always good for children to see people like themselves in successful positions. The media doesn’t really show images of minorities excelling in science and math. Seeing average people who are local and live in this area is very motivating to students.”



The USPTO team at Cora Kelly Elementary School

# A Father's Influence Endures for this 12-Year Volunteer

## Roberta Goren, Microbiology

Volunteer Since 2001

*“Once I had a teacher who referred to some of her students as ‘special,’ meaning they had learning disabilities. I’ve discovered that those students are almost always the ones who are the most interested and engaged in the experiments. The hands-on stuff is very accessible and appealing to challenged students.” It’s better to let them dive in and discover things on their own.”*

A big part of ReSET’s mission is to introduce children to the science professions. Many volunteers discovered their careers through mentoring by a family member, a friend or a teacher, so it is important to show students what real scientists do for a living. In Roberta Goren’s case, her mentor was very close to home—her father. “My father was a general practitioner, then an allergist. We did things at home like nurse a fallen bird back to health. I even figured out how to feed a butterfly with sugar water. I also worked with him in the summers. He let me help with everything he did in the office. We tested people for allergies, made extracts for giving shots and, after I had practiced a lot with an orange, I even gave people shots myself. It was always interesting. It was he who suggested that I might consider being a medical technologist and maybe a doctor . . . I kept studying science and pre-med and continued to really like it. I have always enjoyed what I did and how I got there.”

Roberta also had a teacher in college who inspired her. “She let us do everything. We got to participate in an actual lab, not just stand back and observe. For me microbiology has always been challenging and fun. It’s always different. No two bacteria or specimens are the same. It’s rather like solving a puzzle or being a detective. In fact, I remember touring the FBI years ago and thinking it would be great to be a forensics person!”

Roberta has a B.A. in Medical Sciences from the University of Missouri. Her first professional job after graduation was working at a lab at the National Jewish Hospital in Denver, CO (in the 60s Roberta had accompanied a friend to Denver and ended up staying). She would go on to work in Hematology in New York City and finally in Microbiology at DC General Hospital, where she eventually became Lab Supervisor.

Roberta found out about ReSET through Chief Executive Officer Harold Sharlin, whom she knew from their synagogue. Harold knew she had recently retired and encouraged her to join ReSET. However, even a parent’s influence, a strong personal interest, and a professional background aren’t always enough to stave off a case of “first-day nerves.” Roberta shares: “Although I had been in the classroom when my children were in school and even taught some hands-on science to their classes, I was a bit apprehensive. I worried that the children wouldn’t pay attention. There’s also just the unknown. I had been observing one of the classes at Malcolm X Elementary and considering whether I should volunteer or not, when one of the teachers said to me: ‘Let’s prepare a class and we can do it together.’ And that’s really how it all began.”

Roberta has volunteered at Malcolm X in southeast DC since 2002 and has also occasionally volunteered at Amidon-Bowen Elementary, also in DC. A self-proclaimed generalist, she teaches the children a broad spectrum of science topics, from the differences between liquids, gases, and solids to tree identification through seeds and leaves to microscopy. “I will do anything that strikes their fancy,” shares Goren, “but at least two of my lessons strongly correlate with teacher curriculum. I even teach genetics, which I always think is going to be over their heads, but the kids just love it.”

In addition to volunteering in the classroom, Roberta serves as ReSET’s Volunteer Coordinator, connecting schools with volunteers and organizing programs. She has lived on Capitol Hill for 45 years with her husband Mort whom she married in 1966. They have two sons, a daughter, and twin granddaughters, age five.



Volunteer Roberta Goren works with Malcolm X Elementary students to recognize and distinguish oak, maple, and elm tree leaves and seeds.

# ReSET and EPA/Chesapeake—Smooth Sailing

## EPA Chesapeake

Team Partner Since 2009



**EPA/Chesapeake Volunteer Matt Johnston works with students on an experiment demonstrating air pressure.**

*“The teachers at Annapolis Elementary are definitely happy about the program. I ran into a teacher the other day who said, ‘You’d better call me. You’d BETTER come back!’ ”*

**—Amanda Pruzinsky, EPA Chesapeake Team Leader**

In recent years, ReSET has pursued partnerships with government agencies, professional societies, and universities to deliver programs to schools as teams. One of these partnerships stemmed from Executive Director John Meagher’s relationship with the U.S. Environmental Protection Agency (EPA), where he worked for 32 years. The head of the agency’s Chesapeake Bay Program Office (CPBO) gave John the opportunity to attend staff meetings to discuss ReSET and seek volunteers. The current Director of the Chesapeake Bay Office, Nick DiPasquale, has continued support for staff participation in the ReSET program.

The first EPA volunteer was Mike Fritz, a colleague of Meagher’s from EPA’s wetlands protection program. Fritz and other EPA program managers Carin Bisland, Greg Barranco and Jeff Sweeney make employee volunteerism a priority, and they are especially positive about the ReSET pro-

gram. The Director of the National Oceanic and Atmospheric Administration’s (NOAA’s) Chesapeake Bay Office, Peyton Robertson, also supports ReSET. NOAA volunteers have led students in building a model of a buoy that monitors ocean and estuary data.

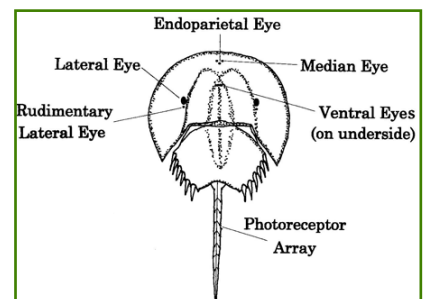
Amanda Pruzinsky, who works for the Chesapeake Research Consortium at the EPA’s CBPO, is team leader of the Annapolis Elementary School team. She confirms that volunteerism is encouraged at EPA. “It is inherent in what we do as an environmental agency. It’s part of the culture. Our bosses really encourage employees to get involved with ReSET. Every year they ask for volunteers at the All Hands meeting, and it is great to see the ‘higher ups’ come along and volunteer as well.”

Although many of the volunteers on the 12-member team work for EPA directly, others are from associated organizations such as the Chesapeake Research Consortium and the University of Maryland. The team, which works with second graders in the fall and fifth graders in the spring, covers habitat, watersheds, clouds, seeds, fossils and horseshoe crabs, macroinvertebrates, and floating/sinking—subjects that are very relevant to their work at CPBO. In the classroom, an experienced volunteer serves as the “lead,” with at least two others serving as “helpers.” The lead reviews the lesson, makes adjustments as needed, replenishes supplies, and typically does most of the talking during the lesson, while the new volunteers distribute handouts and equipment and assist the the students after they break into smaller groups.

At first, Amanda was somewhat apprehensive about being the front person. She admits: “There is some nervousness about being in front of teachers. ‘Am I going to remember everything or look silly?’ Also, there is some fear about losing control of the class. But this fear is allayed quickly, as the teachers are always present and, at Annapolis, they set a very high standard for their students.”

Karen Cifolilli, a second-grade teacher who has worked with ReSET/Chesapeake the past three years, is quite pleased with the program: “My students are very excited when they know it is a ‘ReSET Science Day.’ The Chesapeake/EPA team is wonderful. They are patient and understanding with the students, and prompt and ready to get the students involved.”

As Amanda will tell you, it’s not just the students that benefit from ReSET: “I learn every single time I’m in the classroom, whether it is about the students, myself, or life in general. Our team loves to ask the students what they think about certain topics before we give them any answers. They always have the best responses because they think in a completely different way than adults. Their minds are not yet programmed to think or want only one answer. They are so creative and they illuminate a part of the brain that is dark for many adults.”



**Handout from EPA/Chesapeake’s lesson on horseshoe crabs.**

# ReSET Student Assessment Results

To measure ReSET’s effectiveness in achieving its goal of sparking children’s enthusiasm for science, ReSET surveys its students on their attitude towards science learning. The survey instrument uses questions developed by the National Center for Education Statistics (NCES) in preparing “The Nation’s Report Card.” Using these metrics, ReSET is able to compare the responses of students in our programs with those of fourth grade students nationwide who completed the NCES assessment.

ReSET received 205 responses to the Student Assessment Questionnaire in school year 2012–2013. Responses to three questions that most directly correlate with ReSET’s goal showed the positive impact that ReSET volunteers have on students. Nationally, 67% of students agree with the statement “I like science,” whereas 78% of ReSET students agree. In the Nation’s Report Card, 15% of students agree with the statement “Science is boring”; only 4% of ReSET students agree with that statement.

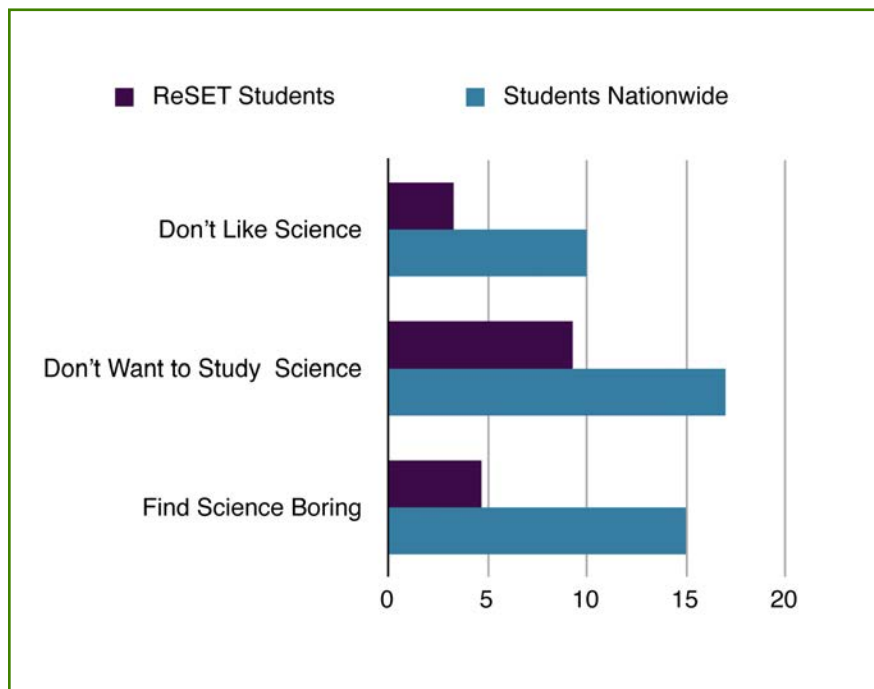
Fewer ReSET students (11%) agree with the statement “If I had a choice I would not study any more science in school” than the nationwide sample of students (17%). When asked if they enjoyed the ReSET classes, 97% of students responded positively.

***“It taught me a lot of things I don’t know. Even my Mom didn’t know, and she’s a nurse!”***

**—Shepherd Elementary School student, DC  
(Volunteer Beverly Yett)**

The chart below shows negative views students have about science, aggregating the results of more than 1,300 ReSET students surveyed between 2010 and 2013.

## % of Students with Negative Views of Science



# ReSET Veteran Gets Students to Imagine the Unimaginable

## Ken Brown, Mechanical Engineering

Volunteer Since 2006

*“I’ve chatted with many students . . . and I get to know them rather quickly. Sometimes we talk about the earth, sun and moon, and I can see how some of them are envisioning and thinking in three dimensions. That’s inspiring to see.”*



**Ken Brown assists students in transferring crickets from a bottle to a cricket cage.**

Ken Brown chuckles when he describes one of his favorite ReSET classroom moments: watching 14 students scramble around the room on all fours chasing down crickets to measure their length with a linear scale. “They get so excited,” shares Brown, “I’ve had to establish a ‘no scream zone.’”

In 2000, Ken had been volunteering with a NASA program called GLOBE (Global Learning and Observations to Benefit the Environment), a volunteer program where students got involved in global warming research, including reporting weather patterns and topographical and geographical changes in their unique locales. Ken enjoyed the program, but he was looking for something more structured and formalized. A teacher at Marie Reed, the school where he was volunteering, told him about ReSET. After learning a bit more online, he signed up.

Ken, who holds a B.S. in Mechanical Engineering from Purdue, and an M.S. in Mechanical Engineering from Catholic University, enjoyed a 30-year career at NASA. While at NASA, he served as an engineer on the fabrication, testing and launch of satellites called Interplanetary Monitoring Platforms and on simulations that tested the Thematic Mapper Plus, which produces all the images of the earth on LANDSAT 7.

For the last seven years he’s volunteered at Malcolm X Elementary in Washington, DC, a school of which he has many fond memories: “I was interested in working in an inner-city school. I really like the teachers and the students there. I hope they will continue ReSET programs, as these children really need science and math experiences that excite them. You should see their faces light up when they learn something new.”

Ken’s own inspiration began at an early age. Always a big reader, he was fascinated by how things work and the beauty of mathematics. “I had always enjoyed using my hands,” says Ken “taking things apart and making models. I just gravitated to science.” Then, in high school, Ken’s geometry teacher fueled his imagination further by deriving solutions to problems several ways. “I had a feeling geometry was poetic. I really enjoyed the subtleties.”

One of Ken’s goals is to give students an insight into what happens inside a typical science laboratory—how an experiment and collection of data requires a protocol. “When a student hears or reads about a new finding or discovery, they know the lab work is always verified by other scientists. Then I want the students to ask themselves ‘how are scientific findings making our life on the planet better?’”

In addition to helping his students to visualize a laboratory protocol, Ken conducts a few forensics experiments with his class. The students watch a video on the life of barn owls. It shows owls casting off pellets of undigested bones. After examining common field mice bones, which are forensic evidence, the students write “a day in the life of an owl from evidence found.” He concludes his six sessions by taking the children on a field trip to the Library of Medicine at the National Institutes of Health (NIH), where the research labs there do similar work to what Ken does with the children during his ReSET sessions—devise protocols and make measurements. Ken talks about the exciting discoveries made at NIH that improve our quality of life, and also mentions the types of jobs offered there, from data takers and machine operators to artists, draftsmen, and computer technicians.

Ken is a bit of a renaissance man. At 78, he runs 30 miles a week, writes for the Smithsonian’s *Volcano Bulletin*, raises bees, and is learning Mandarin. He enjoys being with Lynn, his partner, who was a former Peace Corps and legislative aide, his children and grandchildren, and former NASA colleagues.



# ReSET and the National Science Foundation —You Can Measure the Excitement

## The National Science Foundation

New Team Partner in 2013

*“What I’ve observed is that the students are just extremely involved. They are in the thick of it, moving out of their seats to get closer, asking many questions. They are definitely engaged. A teacher shared with me that she overheard students talking about the upcoming science fair and how they might adapt the yeast experiment into a science fair project. It has really opened them up in other directions.”*—**Susan Garman, Science Enrichment Teacher, Barrett Elementary School**

When Susan Garman first met with the ReSET team from the National Science Foundation (NSF), she told them that the most important thing they could do was communicate their enthusiasm and passion for science. “We told the volunteers during our planning session with them that whatever they are excited about, the children will be excited about,” said Garman. “As teachers, we seek to design lessons that correlate hands-on scientific inquiry to the Virginia Standards of Learning (SOLs), but we’re more interested in the volunteers conveying a love of science in general. Our ultimate goal is to change children’s perceptions that science is boring and to show them first hand, that science is dynamic, engaging and fun.”

Garman, who has worked at Barrett Elementary School since 1998 and has been a Science Enrichment teacher for the last three years, was eager to begin a partnership with ReSET. Currently, an NSF team of seven volunteers provides programming to 72 fifth-grade students, while two additional ReSET volunteers—George Pick and Harold Smith—provide programming to 97 fourth-grade students.

Kurtis Haro and Amelia Greer serve as team leaders for the NSF team that works at Barrett. All of the volunteers from NSF are Science Assistants. Some have volunteer experience, and some do not. Haro, who has a bioengineering degree from the University of California at San Diego and a pharmacology degree from Weill Cornell Graduate School of Medical Sciences, also serves as Outreach Chair. When he heard about ReSET through his colleague Rachel Thornton, he thought it was a perfect fit. “NSF has a particular interest in typically under-represented populations, and places a strong emphasis on building diversity in science,” shares Kurtis. “There’s a diversity population at Barrett and we were also looking for a school in Arlington, which is where NSF is located.” (The school is so close the volunteers can walk to it.) Volunteerism is actively encouraged at NSF and considered within the scope of their jobs. Employees can log in their volunteer time as “official business.”

The NSF volunteers, including a geologist, marine biologist, mechanical engineer, physicist, environmental engineer, and bioengineer, have covered a variety of general science topics with the students: enzymology, metabolism, density and salinity, general chemical reactions, plate tectonics using sugar cubes, and yeast experiments. The team has planning meetings where they share ideas and get feedback from one another. They then try to test out their experiments at home on the weekends. ReSET’s *Volunteer Handbook* and Training Video were also helpful in classroom preparation. Said Kurtis: “I agreed with everything in those materials and it was great to have our ideas and approach reinforced.”



ReSET/NSF volunteer Kurtis Haro and Science Enrichment Teacher Susan Garman work with students to measure gas volumes from CO<sub>2</sub> produced by yeast.

*“During a lesson on sugar and energy, we talked about how there is more energy in regular sugar vs. sugar substitutes. One student chimed in and said that diet sodas don’t actually help with weight loss. She said, ‘it messes up your body, so you can’t lose weight.’ Although she was using a fifth-grader’s words, she was absolutely right. There was science to back up what she said. Diet sodas stimulate the same receptors as those with sugar, and inhibit weight loss because of the effect this has on metabolism.”*

**—Kurtis Haro, NSF Outreach Chair and ReSET volunteer**

Garman thinks the students are more receptive to the volunteers because they’re not teachers. “In our classes we teach hands-on science as part of the curriculum, but the children view us as rather like their parents,” shares Garman. “With the ReSET volunteers they get something different. The scientists talk about their jobs and unique career experiences, not only sharing knowledge in their area of discipline, but their enthusiasm as well. We as teachers learn as much as the students.”

Glance inside a classroom during a ReSET session and you will witness a level of focus and engagement that is astonishing even to the volunteers. From a previous outreach experience in New York City Kurtis knew that simple is usually best. Communicate just a few basic concepts, and students will retain the information better. “I was very impressed by how much they had absorbed and how well their predictions were based on rational thought,” exclaims Kurtis. “They were fully engaged and no one was zoning out. Every kid’s eyes were on the board.”



Garman, and her science enrichment partner, Allyson Greene, work with more than 500 K–5 students, and Garman says they are eager to offer the ReSET program to more grades at Barrett. For Kurtis Haro’s part, they would be happy to comply and to also expand to other schools. “Right now we’re focused in the Arlington area,” says Kurtis. “But after this term we will have a nice toolkit of labs that might allow us to put single volunteers in the classroom and thus expand to more schools.” And next year, Kurtis hopes to reach out to other employees at NSF, including Einstein fellows and other research fellows, as well as program officers.

**“Awesome!” is how Science Enrichment teacher Susan Garman described the ReSET/NSF volunteers who serve Barrett. Here volunteer Amelia Greer assists students in a yeast experiment.**

# ReSET Income and Expense Report

FOR THE YEAR ENDED AUGUST 31, 2013

<b><u>FY 2013 INCOME</u></b>	
Foundations	\$115,875
Corporations	16,000
Interest and Refund Income	95
Individual Contributions	5085
United Way/ Combined Federal Campaign	12,319
<b><u>TOTAL INCOME</u></b>	<b>\$149,374</b>
<b><u>FY 2013 EXPENSES</u></b>	
Salaries	\$80,588
Payroll Taxes	6,218
Fringe Benefits	0.00
Consultants and Professional Fees	14,975
Training	0.00
Travel	940
Equipment	3,989
Supplies	654
Printing and Copying	3,139
Telephone and Fax	0.00
Postage and Delivery	974
Rent and Utilities	0.00
Maintenance	0.00
Technology	740
Evaluation	0.00
Anniversary Event	5,117
Buses for field trips	2,972
Professional Liability Insurance	681
Advertising	0.00
Other	316
<b><u>TOTAL EXPENSES</u></b>	<b>\$121,303</b>
<b><u>CHANGE IN NET ASSETS</u></b>	<b>\$28,071</b>

# The ReSET Field Trip

## *Learning by Doing*



***“I’m so excited. I’ve never been on a boat before!”***

**—Amidon student**

**W**hen students from Amidon Elementary School in southwest DC boarded *The Half Shell*, an 85-year-old “Grandmother” trawler, for a cruise on the Anacostia and Potomac rivers, you could feel the buoyancy . . . and it wasn’t just coming from the water. These 18 third-graders could barely contain their enthusiasm. Though a few students were a little nervous, life jackets and a reassuring safety lesson calmed down any jitters.

One little boy couldn’t stop smiling, his eyes darting from left to right, as if he was afraid he might miss something. He turned to his seat mate and said, “I’m so excited. I’ve never been on a boat before.”

This is one aspect of the ReSET experience that is less tangible but no less valuable. For many students ReSET is not just about getting to do hands-on science with real scientists. Many are having first-time life experiences that expand their world and stay with them forever.

In the fall, Dawn Gray’s class at Amidon was working with a ReSET volunteer on various environmental science experiments. Their field trip with Living Classrooms put the finishing touch on topics covered with the children that term during their ReSET sessions: the role of nutrients in plant growth, characteristics of water, the hydrological cycle, pollution, water and wastewater treatment, wetlands, and fossils.

Once on board the students were divided into three smaller groups, the self-named “DC Ducks,” “Catfish” and “Clean Water,” who were sent to one of three experiential learning stations. At the bow end of the boat one group extracted a water sample with a Van Dorn tube to measure the pH, temperature, and oxygen level of the water. A second group at the stern took a plankton specimen from the water, made a slide of it and examined it under a video microscope. The third group got to try their hands at being sailors, with each student getting a chance to take the helm under “Captain Dave’s” watchful eye. Every 15 minutes or so the groups switched so that everyone got to do all three activities. When they were done and the boat turned back towards shore, the class “went fishing.” After throwing in a net and hauling their catch onto the deck, the children got to touch and examine baby white perch, snails and clams before returning them to their watery habitats.

**261 ReSET students took a Living Classrooms science cruise in fall 2013 through a partnership in which Living Classrooms paid 75% of the cruise cost and ReSET paid 25%, plus transportation between the schools and the dock facility.**

Living Classrooms was founded in Baltimore in 1985, and now has programs in various locations in Washington, DC and Virginia. Their tagline “learning by doing” fits perfectly with ReSET’s objective of providing hands-on, inquiry-based enrichment opportunities in science and math. Living Classrooms is just one of the many field trip venues ReSET delivers without charge to students or schools that lack financial resources. Other field trip destinations include the National Electronics Museum, DC’s Koshland Science Museum, NASA’s Goddard Space Center, and the Glenn L. Martin Wind Tunnel at the University of Maryland.

*Dear ReSET and Living Classrooms:*

*Thank you so much for the WONDERFUL day yesterday! The kids had a fabulous time and came back exhausted but excited about all that they got to do! The trawling, microscope, dissection and actually getting to ‘drive’ the boat made the field trip one that the kids will not forget! What is more, the staff at Living Classrooms was EXCELLENT! As educators we all noticed how good they were with children and with being able to convey information to them! They were true teachers in an outdoor classroom! Thank you, John and Roberta, for allowing us this opportunity and, Andrew, Hannah, Matt, Alison, Adam and Megan for a truly remarkable day!*

—Laura Spage, Teacher  
Laurel Ridge Elementary School, Fairfax, VA

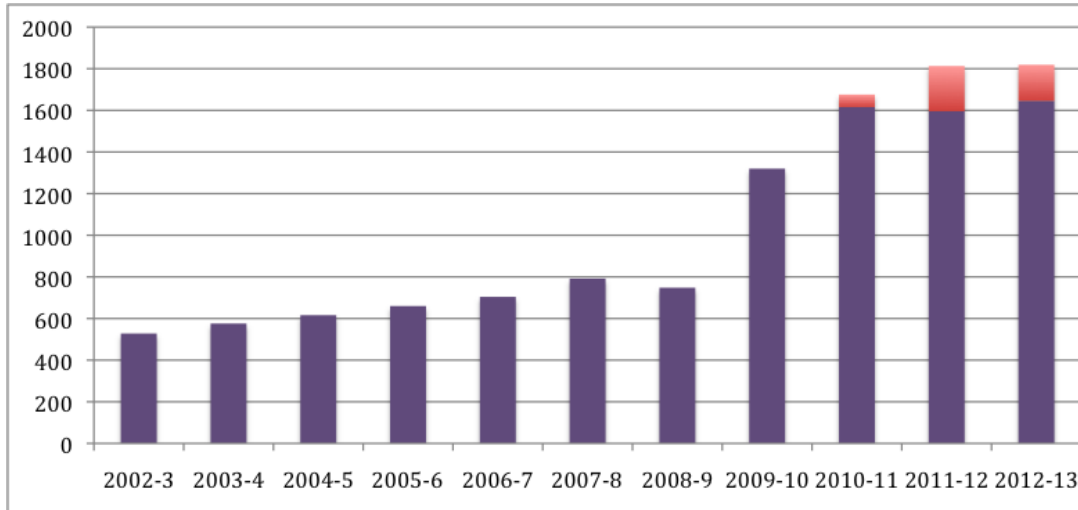


**Laurel Ridge Elementary students set sail on *The Half Shell*.**

# ReSET Data Trends

ReSET annually tabulates data on the number of students reached, volunteers, classroom programs, and schools. In recent years ReSET has benefitted from a large increase in the number of volunteers and the growing level of interest in its programs by Washington, DC area schools. Over the last six years ReSET has doubled the number of students who have experienced our hands-on science programs (see chart below).

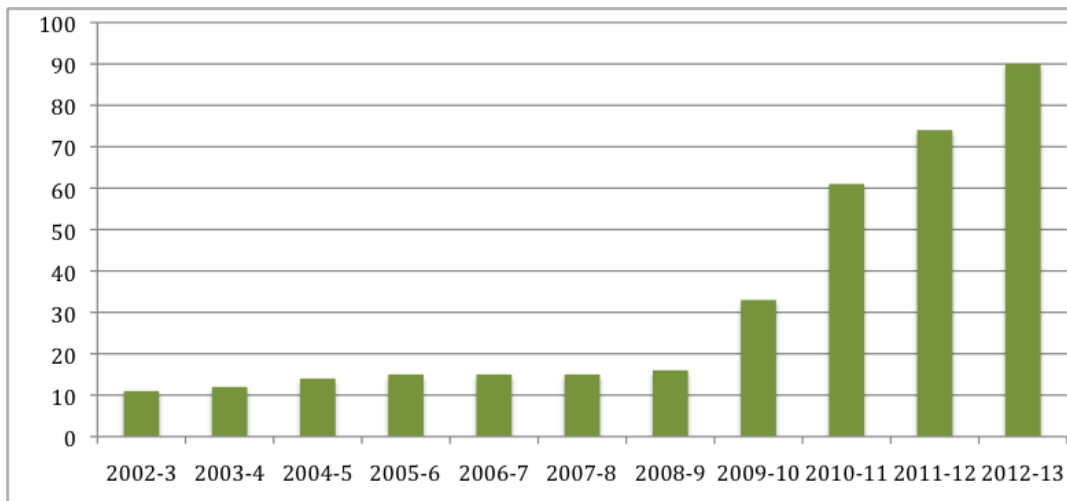
## Number of ReSET Students Served



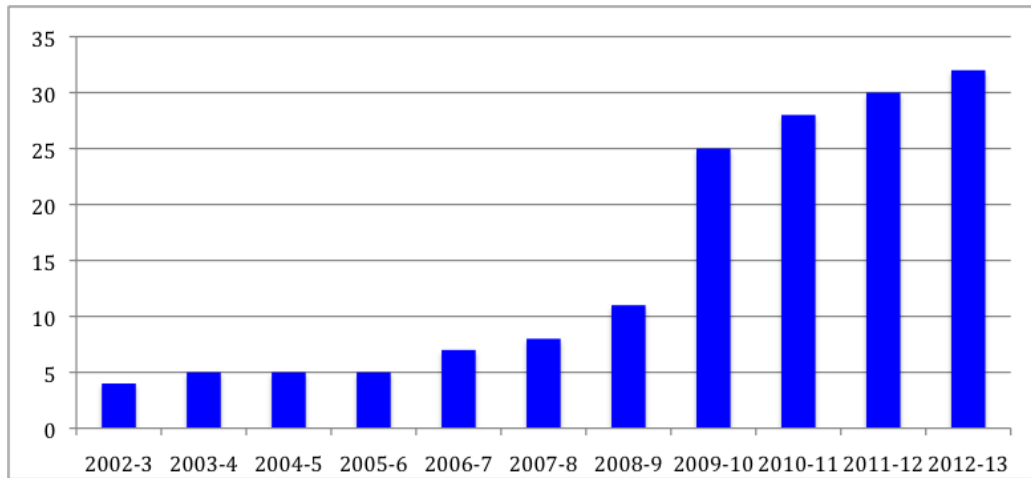
ReSET established a number of new school partnerships. In the spring 2013 semester, ReSET presented programs for the first time at E.L. Haynes Elementary (DC), Watkins Elementary (DC), Sunshine Early Learning Center (DC), Big Mama’s Children’s Center (DC), and Cora Kelly Elementary (Alexandria). ReSET has established new partnerships for school year 2013–14 with Drew Elementary (Arlington, VA), Barrett Elementary (Arlington, VA), Hoffman-Boston (Arlington, VA), George P. Mullen Elementary (Manassas, VA) and the University of the District of Columbia’s Pre-Kindergarten Child Development Center (DC).

ReSET’s growth has been enabled by a large increase in the number of volunteers, particularly among working professionals, recent graduates, and science and engineering students. In addition, there has been an expansion in the number of retired scientists and engineers who are volunteering.

## Number of ReSET Volunteers



## Number of ReSET Schools



The table below shows all ReSET program data tracked for the last 11 years.

School Year	Number of Students	Number of Volunteers	Number of Schools	Number of Classroom Programs
2002-03	528	11	4	22
2003-04	576	12	5	24
2004-05	616	14	5	28
2005-06	660	15	5	30
2006-07	704	15	7	32
2007-08	792	15	8	36
2008-09	748	16	13	34
2009-10	1320	33	25	68
2010-2011	1676	61	28	86
2011-2012	1813	74	30	86
2012-2013	1819	90	32	85

### ReSET Volunteers Reflect a Rich Diversity of STEM Fields

- Aerospace Engineering
- Biology/Marine Biology/Microbiology
- Biomedical Engineering
- Chemical Engineering/Chemistry
- Civil Engineering
- Computer Science
- Cytogenetics
- Earth Science
- Electrical Engineering/Electronics
- Energy Science
- Environmental Science
- Forensic Anthropology
- Geology
- Imaging Science
- Materials and Energy Science
- Mathematics
- Mechanical Engineering
- Medical Physiology
- Neuroscience
- Optics
- Pharmacology
- Physics
- Psychology
- Statistics
- Systems Engineering

# A Childhood Passion Turns Into a Career Path for College Senior, Allison Ho

## Allison Ho, Psychology/Science Education

New Volunteer in 2013

*“It is harder and harder these days to grab and keep students’ attention, especially in math and science. Knowing that I made an impact really got to me.”*

Currently a senior at George Mason University, Allison Ho enjoys the distinction of being the first ReSET volunteer to offer a summer program. Last summer, Allison taught six sessions of general science at E.L. Haynes Elementary School in Washington, DC. A psychology major, Allison intends to get her Master’s degree in Education, also from George Mason. Her ambition is to teach science to middle graders.

Allison heard about ReSET from one of her previous professors, Karen Carter, who shared an email that she had received from Executive Director John Meagher, asking for volunteers. Although she was open to simply volunteering, in talking with John, Allison realized she could tailor her work to a credit-earning internship.

Since childhood Allison has had a passion for science, something she shares in common (and occasionally in competition) with her older brother Julian, also a student at George Mason: “I’ve always wanted to be a science teacher,” shares Allison. “In Girl Scouts we were always going to science-related places to learn new things. We went to a rock quarry to learn about geology and on a science cruise (see page 12) to learn about water sampling. As a child I would go to the library and just sit there and read. I would read about constellations, volcanoes, chemistry and many other things. One of the people that inspired me the most was Madame Curie. I was so interested in her work with radiation and chemistry.”

For six sessions Allison taught 2<sup>nd</sup> and 3<sup>rd</sup> graders about baking soda volcano chemistry, acids and bases, the density of liquids, plate tectonics, and simple machines. She got many of her ideas from lessons that she found online and from some of the books the children were covering in their reading comprehension class.

Although Allison is certainly no stranger to working with children (she has been a camp counselor and has volunteered with the Girl Scouts,) it had been a while since she’d worked with children that young. “I worried about what I would teach them,” admits Allison. “Do I just simplify the topics I cover with middle schoolers or do I start from scratch? I think that’s the biggest thing I’ve learned from working with ReSET . . . that there is a different way of communicating with students of different ages. You have to adapt your language, not only to the age level of the children, but to the teachers as well. I learned that I needed to customize the way I said things. Even if the children don’t fully understand everything, if you engage them, they will really try and then they will get into it.”

In fall 2013, Allison continued her ReSET internship at Laurel Ridge Elementary in Fairfax, VA, working this time with fourth- and fifth-graders. ReSET started at Laurel Ridge in 2011 after a connection was established between John Gaffigan, a ReSET partner responsible for science education in the Armed Forces Communications and Electronics Association (AFCEA), and Laura Spage, the fifth-grade teacher in one of Allison’s classrooms. Although Allison’s preference is to teach middle schoolers (“a rich, transitional developmental period”), she is happy to work with any age group.

It’s clear that she has the gift. Following her program at E.L. Haynes, a student came up to her and told her that she didn’t want Allison to leave because she loved learning from her. “I had thought I was doing a good job,” says Allison. “But after that comment, I knew I was significant to the class. I was so touched.”

In addition to reading and writing, Allison is an avid dancer, with a preference for ballroom and Latin dance.



**GMU Senior Allison Ho assists students at Laurel Ridge Elementary in a baking soda and vinegar volcano experiment.**



# ReSET Volunteers

Lee Abramson  
Robert D. Adams  
Sarah Al-Hashimi  
Thomas R. Artman  
Mahveen Azam  
Greg Barranco  
LaSone Barber  
Carin Bisland  
Anne-Marie Boehler  
Ibrahim Bori  
Justin Bova  
Sarah Brzezinski  
Matthew L. Brooks  
Ken Brown  
Casey Bryant  
Anna Stuart Burnett  
Keegan Caldwell  
Lisa Caputo  
Matt Carnavos  
Diana J. Cheng  
Nissa Chugthai  
Tamim Chowdhury  
Danielle Clerkley  
Ray Collins  
Lindsay D'Ambrosia  
Thomas Dickey  
Tonia Dollinger  
Elizabeth Dougherty  
Barbara Elkus  
Margaret Enloe  
Katherine Faley  
Michael W. Fitzmaurice  
Susan Flashman  
Emily Franke  
Mike Fritz  
Larry Galka  
Sonia L. Gay  
Emma Giese  
William L. Gill  
Michael Goldstein  
Roberta Goren  
Yara J. Green  
Amelia Greer  
Gregory Gurvich  
Arthur O. Hall

Kurtis Haro  
Jeremy Hanson  
Bob Hauptman  
Allison Ho  
Antony Hodge  
Eva Jacobs  
Nithya Janakiraman  
Matt Johnston  
Anya Jones  
Bill Lake  
Aimee Lee  
Gilbert Lee  
Stephen Leete  
Matt Lettrich  
John M. Lindlof  
Juvena Loo  
Channing Mahttan  
Joseph Mait  
Panan Mamilapalli  
Hannah Martin  
Halley Massey  
Sonya Mazumdar  
Melissa McCartney  
David McInnis  
John Meagher  
Pete C. Mehravari  
Jesse Moll  
John Mortell  
Linh Nguyen  
Mai Nguyen  
Nacrisha Norman  
Meghan O'Donoghue  
Femi Odumodu  
Kojo Opaku  
Sari Jayne Paikoff  
Zachary Pape  
William B. Partridge  
Bharat Patel  
Mariana Pavon  
Dennis Pedder  
Tammy Pham  
George S. Pick  
Philip Posner  
Diane Post  
Ramya Prakasham

Alka Prasad  
Amanda Pruzinsky  
Christyann R. Pulliam  
Abhi Rao  
Abhisek Rao  
Rich Repplier  
Mario Riojas  
C. Ortiz Rodriguez  
Felton Rogers  
Lea Rubin  
Lloyd Samples  
Harold Sharlin  
Avigayil Shudofsky  
Laura Shumow  
Kavel Singh  
Sonia Singh  
Rebecca Slomski  
Harold Smith  
Peter Sowa  
Sarah Staton  
Justin Stefanon  
Martin Stein  
Bob Stern  
Wayne Sukow  
Jeff Sweeney  
Lauren Taneyhill  
Bradley Teets  
Nicolas Terzian  
Meghan Thompson  
Rachel Thornton  
John Troung  
Jenny Tsao  
Marsha M. Tsay  
Jenna Valente  
Juan Valentin  
Luan Van  
Jithesh Veetil  
Kimbleann Verdi  
John Walsh  
Howard Westmoreland  
Bob Williams  
Grant Withers  
Beverly Yett  
S. Scott Young



***“Mr. Lake taught the class things we never knew about.  
Also, we did exciting/fun experiments!”***

**— Eaton Elementary School student, Washington, DC (Volunteer Bill Lake)**

# The Schools We Serve

ReSET is proud of the schools and child development centers with which we partner:

- Amidon Elementary, SW DC
- Annapolis Elementary, Anne Arundel County, MD
- Barnard Elementary, Washington DC
- Barrett Elementary, Arlington, VA
- Barrett Elementary After-School Program, Arlington, VA
- Bren Marr SACC After-School Program, Alexandria, VA
- Columbia Elementary, Annandale, VA
- Cora Kelly Elementary, Alexandria, VA
- Cora Kelly After-School Program, Alexandria, VA
- Drew Elementary School, Arlington, VA
- East Silver Spring Elementary, Montgomery County, MD
- Eaton Elementary, NW DC
- E.L. Haynes Public Charter School, NW DC
- George P. Mullen Elementary School, Manassas, VA
- Georgian Forest Elementary, Silver Spring, MD
- Greenbrier Learning Center, Arlington, VA
- High Bridge Elementary, Prince George's County, MD
- Hoffman-Boston Elementary
- The Lab School at the University of DC, NW DC
- Langdon Educational Campus, NE DC
- Langley Educational Campus, NE DC
- Laurel Ridge Elementary, Fairfax, VA
- Ludlow-Taylor Elementary, NE DC
- Malcolm X Elementary, SE DC
- North Chevy Chase Elementary, Chevy Chase, MD
- Catherine T. Reed Elementary, Lanham, MD
- Ross Elementary, NW DC
- Shepherd Elementary, NW DC
- Takoma Education Campus, NW DC
- The Lab School at the University of District of Columbia, NW DC
- Wakefield Forest Elementary, Fairfax Co., VA
- Watkins Elementary School, SE DC
- Waugh Chapel Elementary, Anne Arundel Co., MD
- Whittier Educational Campus, NW DC



**Cora Kelly Elementary, ReSET's first Core Partner School.**

# ReSET Board of Directors

## **Keegan Caldwell**

Reston, VA  
Volunteer and Chemistry PhD candidate  
George Washington University

## **Eva E. Jacobs**

Chevy Chase, MD  
Retired statistician, active volunteer

## **Anya Jones**

Washington, DC  
Assistant Professor, University of Maryland

## **John W. Meagher**

Fairfax Station, VA  
Executive Director, ReSET

## **Lewis J. Mendelson**

Bethesda, MD  
International Capital Market Consultant

## **Harold I. Sharlin**

Washington, DC  
Board Chair and Chief Executive Officer Arlington, VA



*“I believe that it is my personal responsibility to inspire students and push them to learn. Each and every student has something to offer, and ReSET’s enhancement of the science curriculum will help to develop the next generation of scientists, engineers and technologists. ReSET’s unique hands-on approach seeks to spark the interest of our students and to provide them with the problem-solving skills necessary to face our largest scientific challenges.”—Keegan M. Caldwell*

*“As a researcher, I thrive on asking questions and discovering new things. As an educator, I get the privilege of teaching my students to do the same. ReSET allows me to interact with a new community of students and show them how much fun science and engineering can be. As a member of the board I hope to contribute to the integration of education across multiple levels, exposing elementary schoolers to the possibility of continuing to study science and engineering in college, and reminding college students that science is not only a jumble of equations to be solved; it’s also a lot of fun.”—Anya Jones*



# ReSET Staff

- **Dr. Harold I. Sharlin, Chief Executive Officer**  
harold.sharlin@verizon.net
- **John W. Meagher, Executive Director**  
reset@resetonline.org
- **Roberta S. Goren, Volunteer Coordinator**  
rsgoren@verizon.net

## **Contractors**

- **Lyndi Schrecengost, Director of Funding and Communications**  
lyndi@fluentwriters.com

## **Educational Partners**

Many ReSET volunteers are recruited through partnerships with federal agencies and professional societies. These include:

- The American Institute of Astronautics and Aeronautics
- The American Statistical Association
- The Asian Pacific American Network
- The Association for Women in Science
- The Environmental Protection Agency
- The Fish and Wildlife Service
- The National Oceanic and Atmospheric Administration
- The National Society of Black Engineers
- The Society of Hispanic Professional Engineers
- The U.S. Patent and Trademark Office

## **Interested in Supporting ReSET?**

### ***Make a difference in a young student's science education:***

Classroom experiment supplies for one school year—\$100  
Museum or Lab Field Trip for 50 students—\$1,000  
New partnership with school or learning center—\$2,500

- **Please mail your donation to:**

**ReSET  
P.O. Box 9400  
Washington, DC 20016-9400**

- **Or donate online at: [www.resetonline.org](http://www.resetonline.org)**
- **Or contact John Meagher at 703-250-0236**



# ReSET Funders

ReSET is very grateful for the corporate, foundation and individual donor financial support that makes it possible to reach and inspire so many young and eager students:

- The Morris and Gwendolyn Cafritz Foundation
- The Clark-Winchcole Foundation
- The Jack Kent Cooke Foundation
- The Commonweal Foundation
- The Community Foundation of Northern Virginia
- The Dimick Foundation
- The Garb Foundation
- The Harman Family Foundation
- The Hattie M. Strong Foundation
- The Hitachi Foundation
- The Richard E. and Nancy P. Marriott Foundation
- The Mufson Family Foundation
- Northrop Grumman
- The Luther I. Replogle Foundation
- Sharing Montgomery Foundation
- The Sidgmore Family Foundation
- Social Forward
- U.S. Airways Corporation
- U.S. Airways Education Foundation
- The Webber Family Foundation
- Zeta Associates

## A Special Thank You to Our Corporate Sponsors:



***NORTHROP GRUMMAN***





*“Since ReSET began in 1988, more and more girls have taken an active and enthusiastic role in ReSET’s classroom science and math experiments. This has been due in large part to women such as longstanding volunteer and Board Member Eva Jacobs. Ms. Jacobs was a pioneer in the field of statistics, and for 17 years she has been an example to girls as they begin to envision their own future careers. Today, we have many more ReSET women volunteers, including a large number who are still working.*

*ReSET has contributed much to guaranteeing that there will be many more women Nobel laureates in the future.”*

**—Harold I. Sharlin, ReSET Founder and Chief Executive Officer**



The collage features several key ReSET materials:

- ReSET DVD:** Titled "SPARKING ENTHUSIASM FOR SCIENCE" and "A GUIDE TO CLASSROOM VISITS AND FIELD TRIPS". It features a glowing lightbulb and the text "Retired Scientists, Engineers, & Technicians www.resetonline.org DVD Version".
- ReSET Volunteer Handbook:** A spiral-bound book with a green cover and a photo of a man and a child working together.
- Website Screenshot:** Shows the ReSET website with navigation tabs for "Recruiting a Volunteer", "ReSET Award Events", "For Science Educators", "Supporting ReSET", "For Current Volunteers", "News and Reports", and "Classroom".
- Video Player:** A YouTube video titled "ReSET - Sparking Enthusiasm for Science" showing a man in a white shirt speaking.
- Handwritten Note:** A "Thank You" note with a drawing of a lightbulb and the text: "Dear Mr. Sharlin, Thank you for giving us this chance to help our school for making it better. When I'm old I'll help you make the experiment and I'll help you make it a real one!"

At the bottom of the collage is a green bar with the ReSET logo and a "DONATE" button.

## We're Ready for an Upgrade!

ReSET provides all training and resource materials to its volunteers free of charge. Some of these materials are in need of an upgrade and a facelift. If you are interested in helping to fund the development and production of these items, please consider donating to ReSET (see page 21).

- Volunteer Handbook
- Recruitment & Training Videos
- YouTube Training Videos
- Web Site
- Informational Brochure

January 8, 2013

Harold Sharlin, Chief Executive Officer  
ReSET  
PO Box 9400  
Washington, DC 20016

Dear Dr. Sharlin:

Congratulations to you and your volunteer scientists and engineers for 25 years of service to DC Public Schools. Thanks to your efforts more than 10,000 students have had deep learning experiences with professionals from a wide variety of scientific disciplines.

The opportunity for students to perform hands-on experiments with scientists and engineers adds a meaningful dimension to their science education. ReSET's objective of showing students that science is exciting, as well as your longer term goals of inspiring students to consider careers in Science, Technology, Engineering, and Math (STEM) fields, aligns to the goals of DCPS' vision for STEM education. Both our STEM vision and our STEM school program model include an emphasis on hands-on science and partnerships that bring professionals into the classroom. The extended nature of ReSET's engagements (which include at least six sessions over the course of a semester) also contribute to our goals of offering strong support for developing teachers' content knowledge and pedagogical skill in STEM subjects.

We appreciate your enduring partnership and your willingness to adjust your focus to support priority initiatives of the district, such as the DC Catalyst Project that created six STEM schools in 2009. Your commitment to presenting multiple programs in all six Catalyst STEM schools was an important contribution to this initiative. The orientation program that ReSET provides to new volunteers prior to their first classroom visit ensures quality learning experiences for our students. As we continue to develop our STEM strategy, your willingness to offer advice and lessons learned in addition to resources, such as your orientation video and handbook training materials, are also appreciated.

We hope that our partnership will continue for many years to come, and that many DC students will start their pathway toward careers in science and engineering with a ReSET volunteer in their classroom.

Sincerely,

  
Kaya Henderson  
Chancellor



*“The volunteer brought such interesting and exciting experiments and activities . . . . He allowed the students to make predictions and consider variables that might change the outcome. He also explained that science doesn’t always turn out as we expect. These are priceless details about science that are not always noted, and perfect for a second grader to learn.”*

**—Molly Moran, Annapolis Elementary School**

P.O. Box 9400  
Washington, DC 20016-9400  
[www.resetonline.org](http://www.resetonline.org)



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