

CONNECTICUT SCIENCE CONNECTION

June 2020

THE CONNECTICUT BUILDING A PRESENCE FOR SCIENCE NETWORK IS SUSTAINED THROUGH THE ADVOCACY OF THE CCAT, CONNECTICUT SCIENCE SUPERVISORS ASSOCIATION, THE CONNECTICUT SCIENCE TEACHERS ASSOCIATION, AND THE CONNECTICUT ACADEMY OF SCIENCE AND ENGINEERING

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Names and E-mail addresses of our Points of Contact and Key Leaders are not shared with any other entity



Professional
Development
Opportunities! Are
you interested in

some distance learning ideas? This may help you to get through the difficult times we are experiencing. Visit CSTA.wildapricot.org and click on Opportunities. You will not be disappointed. Contact us if you have questions.

https://csta.wildapricot.org/



Join the CSSA! www.cssaonline.org All Teacher leaders

welcome You do not have to be in a formal Supervisor Position, but should be interested in helping keep your colleagues informed on the latest in science education. At this time, we hope to provide support to teachers in a leadership situation.

BOOKMARK THIS SITE!

The Connecticut State Department of Education wants to provide valuable resources to the field and is continually working to make these resources easy to find in one central location. Therefore, beginning January 1, 2020, the CTCoreStandards.org website will no longer be operational. All of these resources have been moved to the CSDE website at

https://portal.ct.gov/SDE. They can be accessed under K-12 Education, Academics, CT Core Standards. The direct link is

https://portal.ct.gov/SDE/CT-Core-Standards. Please bookmark this for future reference.



Do you have particular lessons that have worked well with your students at their location (whatever it might be)? Do you have tips on helping parents to cope with keeping their youngsters on task and resisting the temptation to do lessons themselves? Are there some

activities which have worked well outdoors in a safe location so students can work outside even in a small apartment (like a windowsill)?

Has this led you to find your creative chops? Please email me at Eloisef302@gmail.com with things that worked for you and your students so I can share them with your colleagues.

About Young Women in Bio

Women In Bio
Promoting Diversity and Inclusion

Young Women In Bio (YWIB) gives girls the inspiration and support they need to become tomorrow's leaders in science, technology, engineering and math (STEM). As a nonprofit with 13 chapters

across the U.S. and Canada, we partner with leading companies, universities, hospitals and organizations to develop engaging, educational and motivational programs. We aspire to be the "go to" organization for girls looking to shape and change the world through STEM, providing them with the tools and resources they need to build successful careers.

To learn more about YWIB, local chapters events or Spring into STEM, please visit: http://www.womeninbio.org/ywib

Teaching Science During a Pandemic

A National Study of K-12 Science Instruction

Science teachers, from Kindergarten to 12th grade, are critical for providing accurate and timely information about urgent health-related issues like coronavirus/COVID-19. But how do teachers respond when important and urgent issues like these emerge? How do they decide whether to address these issues in their teaching? What types of resources do they draw on to design instruction?

With a grant from the National Science Foundation, researchers are trying to answer these questions about coronavirus/COVID-19. Whether or not you taught about coronavirus/COVID-19, we need your help. The goal is to have over 3,000 science teachers across the country complete an online questionnaire. The results will inform how science teachers respond to coronavirus/COVID-19, as well as future urgent and emerging health issues. All teachers who complete a survey will be entered into a drawing for 1 of 50 \$100 cash awards. To read more and register for the study, please follow this link.

NSTA's Daily Do

Check out three Daily Dos, featured below, from the NSTA collection. Share your photos of your class and/or students with their families completing these Daily Dos with us on Twitter @NSTA #DailyDo and explore our entire collection of Daily Do sensemaking tasks.

- Elementary: <u>How Do We</u>
 Find Patterns in Weather?
- Middle: What's in an Egg?
- High School: Why Is Water
 Sphere-Shaped in Space?

Quality Examples of Science Lessons and Units

Achieve's EQuIP Peer Review Panel for Science (PRP) uses the EQuIP Rubric for Science to evaluate instructional materials and identify lessons and units that best illustrate the cognitive demands of the NGSS. Explore this featured resource for high school: Interactions Unit 2 – How Does a Small Spark Trigger a Huge Explosion?

Science Learning Activities for Families

Learning in Places has created activities for K–3 students and their families to engage in science in the places they live. Learn about and explore socio-ecological systems in your neighborhood by taking wondering walks, making observations, asking "should we" questions, modeling data and relationships, conducting investigations, analyzing data, and offering explanations. Explore this featured resource: LE 1.B Family Learning Across Places.



Dear Teachers and School Leaders,

Skills21 at EdAdvance is excited to announce the second year of an opportunity for high school teachers interested in the

intersection between STEM subjects and Augmented Reality. With support from the National Science Foundation, Skills21 is recruiting a cohort of biology high school teachers this year who want to engage their class in using Augmented Reality (AR). Biology teachers will pilot a curriculum unit that incorporates AR apps and design and can be completed in the classroom or as part of remote learning. Through the Skills21 AR challenge, students in teams or individually will be compelled to develop a product, service or solution to meet a need, solve a problem or capture an opportunity to present at our online Expo Fest in the spring of 2021. These solutions should have a physical prototype and then must be enhanced by creating an augmented reality app to deepen a person's understanding of the solution. Skills21 provides student and teacher coaching and AR support to guide your students through the process either remotely or in person.

Participating teachers will receive:

- \$1000 stipend for planning, out-of-class time engagement and curricular review
- \$500 for project materials
- Onsite or remote coaching and professional development Participating teachers will need to:
- Pilot and/or provide feedback on one Augmented Reality unit that teaches students how to use and create AR apps.
- Facilitate a team or group of students to participate in the 2021 Virtual Expo Fest to compete in either the

NGSS Challenge or Personal Interest Project category that include an AR app

• Allow Skills21 to conduct pre- and post-intervention online surveys with their students (Fall-early winter and June)

What's the time commitment?

• In and out of class time commitments for teachers will vary based on individual class settings. Experienced

Skills21 staff will work with prospective teachers to help gauge the required time commitment and investment

Priority Eligibility:

• First priority is for high school biology teachers that work with traditionally underserved student populations but all should apply. How to Get Involved Interested teachers should complete this form or contact Liz Radday (radday@edadvance.org) or Matt Mervis (mervis@edadvance.org).

The National Science Teachers Association has many awards with a variety of



categories. Many include incentives to support educators attending the National Conference or the National Congress in the summer. For more information go to:

http://www.nsta.org/about/awards.aspx



Thanks to all that responded to our survey! If you have not, please click on the link and fill it out. We have had to cancel our annual CT Science Educators Conference that was being planned for this November. We remain committed to offering and supporting science professional development for Connecticut educators. Our committee has been reviewing the responses and will get back to those offering to help.

CSTA PD Survey

From Bob Riddle: To sign up for ISS sightings: https://spotthestation.na sa.gov/

General article - How to Reopen
Schools: What Science and Other
Countries Teach Us - New York
Times, July 11, 2020. What concerns
to you have about reopening your
science class? Let us know at
ctsciteachers@gmail.com

Teachers, often creative, have come up with something called BitMoji Classrooms, such as those featured on You Tube, which gives instructions and shows many that have been developed.

https://www.youtube.com/watch?v=ZUDoniqrUmQ However, this technique has become controversial as it has become required in some districts and it does not necessarily provide answers to all the problems that come with distance learning, especially with older students.

A link to the CDC recommendations for schools...the 9 page document you have read about in the news can be found here:

https://www.cdc.gov/coronavirus/2 019-

ncov/downloads/community/School -Admin-K12-readiness-and-planningtool.pdf



CSSA member Rich Therrien has expressed some concerns and his opinion about suggestions for reopening schools as follows:

"Some of the issues with the concepts of every student every day seem to be problematic for some subjects.

For subjects that rely on materials for best practice instruction: science for hands on lab activities, arts, music, play based early childhood, math manipulatives/centers, physical education, etc.. there are large concerns about how to continue what we know is best practice in instruction.

Our materials are meant for groups of students working together, not for single, so having full classes means we don't have enough materials, we don't have the spaces designed for this type of instruction.

There are concerns about sharing materials, cleaning them in between classes, and keeping to safe protocols.

And certainly, classes of students sitting at single desks, never interacting, paying attention to a teacher lecturing is not what we know is best practice in many areas. Yet science instruction under NGSS is still scheduled to be tested at elementary, middle and high school, and NGSS absolutely requires students to be able to interact with materials and the world around them, to construct models and arguments based on evidence as they have practiced during instruction. It CANNOT be taught by students just watching videos and reading, as we have explained many times.

Combining hands on activities with some type of simulated labs/online learning seems to be the best option, delivered in a manner that allows some students to be at home with some students in school, and allows students to experience the wide and full range of science instruction."

Do you agree? Disagree? Have some results from attempts to do online instruction? Share your experiences and your opinion with me at eloisef302@gmail.com I will pass it on to CSSA leadership.

CONNECTICUT STEM FOUNDATION SCHOLARSHIPS



Did you know that The CT STEM Foundation offers up to \$1,000 in scholarships to encourage both middle school and high students to participate in STEM studies? But wait,

there's more! The Foundation also offers two \$1,000 scholarships to graduating seniors who participate in the CT STEM Fair.

In keeping with its mission to engage pre-college Connecticut students in multiple STEM activities, the foundation offers two summer scholarships to undergraduate science students planning to attend a college/university summer STEM course, a summer internship, an informal science education program or a tuition high school summer education program. Depending upon tuition and expenses, up to \$500 is granted for each scholarship. One is awarded to a rising sophomore, junior or senior high school student. The other is awarded to a middle school student.

Another aspect of the foundation's mission is to provide support to graduating seniors planning to major in a STEM related field in college. Two \$1,000 scholarships are awarded to applicants who participated in the current year's CT STEM Fair. Additional information, including scholarship application forms and the deadlines for submission, are available on the CT STEM Foundation's website, https://ctstemfoundation.org/ under the Scholarship section.

CEA's Safe Learning Plan

Delayed openings, staggered schedules, distance learning, and guranteed funding are among the six specific actions outlined in CEA's Safe Learning Plan that must be taken to ensure safety for all, before schools reopen.

Read the CEA Safe Learning Plan.



In order to support the middle-grade science educator community

during this challenging time, SEPUP is making available NGSS-aligned free resources for remote learning. SEPUP is the Science Education for Public Understanding Program at the Lawrence Hall of Science, University of California-Berkeley. To access these free resources, visit https://sepuplhs.org/middle/third-edition/simulations/index.html The resources currently available are listed next.

Life Science

Cells: Modeling Cell Structure and

Function

Ecology: Effect of an Introduced

Species

Evolution: Manipulating Genes

Evolutions: Mutations and Evolution

Physical Science

Fields: Visualize and Electric Field

Fields: Electric Field Transporter

Space: Moon Phases

Space: A Year Viewed from Space

Space: Modeling Gravity

Earth Science

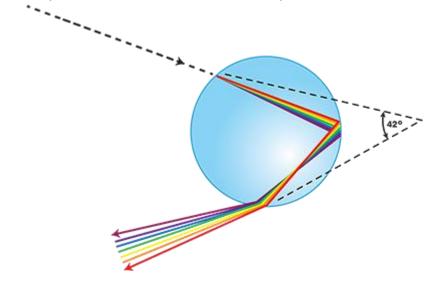
Geology: Mapping Locations of Earthquakes and Volcanoes Geology: Plate Boundaries

Wendy M. Jackson, Ph.D., Lawrence Hall of Science, Curriculum and Professional Development Specialist,

UC Berkely

This following neat activity shows kids how to simulate rainbows! https://scijinks.gov/rainbows-simulation/

Rainbow Basics: When the conditions are just right, a rainbow will appear in the sky. It happens because the sunlight shines on water droplets. As the light passes into the droplets, the light bends, or refracts, a little, because light travels slower in water than in air (because water is denser). Then the light bounces off the back of the water droplets and goes back the way it came, bending again as it speeds up when it exits the water droplet. This bending splits the light into the different colors like a prism, and we see a rainbow in the sky.



<u>Science Teaching During Coronavirus School Closures—NSTA Is Here to Help</u>
As tens of thousands of schools across the country close their doors in the wake of the coronavirus outbreak, teachers are scrambling to find materials and resources.

To support all educators during this difficult time, NSTA is offering a free 30-day membership, providing you with access to more than 12,000 digital professional learning resources and tools. Simply <u>create an account here</u> and start developing your own personalized digital learning experience.

Check out the <u>online resources</u> we have available, including our <u>Interactive eBooks+</u>, <u>web seminars</u>, and <u>free book chapters</u>. Or take advantage of our new lesson plans on the coronavirus for <u>secondary</u> and <u>elementary</u> students. Check out the <u>NSTA website</u> daily for featured content and tips on how to use these resources.

What an extraordinary week! Today we ended the <u>Virtual Regeneron</u>
<u>International Science and Engineering Fair</u>'s live programming by highlighting methods for supporting students in their research. We encourage you to give us feedback on Virtual Regeneron ISEF by filling out our <u>survey</u>.

The Society for Science & the Public is thrilled to be able to share all our Virtual Regeneron ISEF 2020 programming, on-demand, through June 5. Please share this fantastic opportunity with your colleagues, friends and family. Log in HERE and continue to explore!

Trying to decide which session to head to next? Here are highlights from some of our favorite discussions:

- Women in STEM
- Excellence in Science & Technology
- Innovation & Entrepreneurship
- The Role of CRISPR and COVID-19
- Internet Evangelism—A Oneon-One Interview with Vint Cerf
- <u>Technology and Its Role</u> During the Pandemic

And don't forget to watch our finalists "Come Together" and Dance Around the World.

TIPS FOR A GREAT EXPERIENCE:

- Your browser can affect how Virtual Regeneron ISEF is displayed on your screen. If you aren't seeing the full screen you may need to decrease your screen resolution from 100% to 80% using the "zoom" option in the settings menu of your browser.
- All the panel discussions –
 featuring top minds in
 science, engineering and
 technology can be
 viewed on the Main Stage.
 Choose from the list and
 click on launch to watch
 the discussion.
- If there are panels or other information that you want to save for later, click on the briefcase button.
 Think of the briefcase as a bookmark – you can add sessions, videos, documents and other materials that interest you throughout Virtual Regeneron ISEF and come back to them later.

BEYOND THE PANELS

- View our programming guide.
- Check out the amazing research done by the 1,255 Regeneron ISEF 2020 finalists by visiting the Finalist Exhibit Hall!
- The ISEF Commons is home to dozens of colleges and universities, where anyone can learn about college admissions in the current climate.
- Visit the STEM Experiential Hall where you can access interactive and immersive experiences.
- Visit the Volunteer Office and sign up to participate in a Zooniverse citizen science project! The Society is challenging ISEF attendees to devote a collective 2,020 hours of volunteer service.
- Head to the Sponsor Hall to learn more about the amazing companies, organizations and foundations that are supporting Virtual Regeneron ISEF 2020.
- Have you been able to solve any of the Kominers Conundrums? Stay tuned for all the puzzles and solutions, which will be posted by the end of next week.
- Follow us on <u>Twitter</u> and <u>Instagram</u> at @society4science and on <u>Facebook</u> at @societyforscience. Be sure to tag your posts with #RegeneronISEF.

We hope you continue to enjoy the Virtual Regeneron ISEF 2020 programming! Don't forget to give us your feedback by filling out our <u>survey</u>.

In addition to Title Sponsor Regeneron, Major Sponsors are Akamai Foundation, Broadcom Foundation, Johnson & Johnson, Microsoft Azure Sphere, National Geographic Society, Rise and Siegel Family Endowment. Additional support provided by Arconic Foundation, Craig and Barbara Barrett Foundation, The Richard F. Caris Foundation, Covington Capital Management, Gilead Sciences, Susie and Gideon Yu Foundation, Carl Zeiss, Inc. and Feng Zhang Fund for STEM Outreach and Equity.

P.S. Check out the <u>video</u> from the Society for Science & the Public celebrating the future scientists, engineers and innovators among the Class of 2020! Join us by posting a photo on Facebook, Instagram or Twitter featuring your favorite high school researcher who is graduating this year, using the hashtag #SSPClassof2020. High Schools can celebrate their science research clubs and classes, affiliated science fairs can post photos of their senior competitors, and parents can post photos of their teenagers (perhaps even with their first science fair projects). Class of 2020, we wish you the best.



The following are from the CSTA:

CSTA Connecticut Science Teachers Association

Many thanks to the many

teachers who are putting together Distance Learning Activities during this unprecedented event. A page of possible resources -

https://csta.wildapricot.org/Distanc e-Learning-Resources/ - that we are continually updating with your input. Thanks for your contributions. Let us know about any resource that is working for you!

WE ARE HAPPY TO ANNOUNCE SOME OF OUR EXCELLENCE IN SCIENCE TEACHING AWARDEES!

Excellence in Elementary Science Teaching 2020

Phaedra Taft, Westport,
 CT

Excellence in Middle School Science Teaching 2020. Sponsored by Lab-Aids

 Kristina Ngai, William J. Johnson Middle School, Colchester, CT

Excellence in High School Science Teaching 2020

Diane Pintavalle,
 Glastonbury High School,
 Glastonbury, CT

We have a new award this year -Ralph and Ruth Yulo Beginning Teacher Award 2020

o Robert Wilkos, Middletown High School, Middletown, CT

Other awardees will be announced in a future email.

I just found this exciting web site ctspacegrant student-applications . may be outdated. (next column)

Sample Award Opportunities:

Sample Internship Opportunities: Sample Project Opportunities:

Corsair Internship (PDF)

CCAT Internship (PDF)

NE Air Museum Internship (PDF)

NE Air Museum Summer Internship (PDF)

Pratt & Whitney Project List (PDF)

Pratt & Whitney Project Details (PDF)

NASA Opportunities (PDF)

Sikorsky Anti Vibration (PDF)

Sikorsky Short Ranged Wireless (PDF)
Sikorsky Pitot Static Analysis (PDF)

Pratt&Whitney Project List (PDF)
Pratt&Whitney Project Details (PDF)

Sikorsky Anti Vibration (PDF)

Sikorsky Short Ranged Wireless (PDF)
Sikorsky Pitot Static Analysis (PDF)

https://ctspacegrant.org/funding-programs/student-opportunities/student-applications



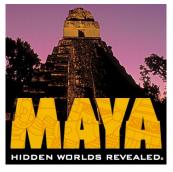
Welcome back!

We are open* and everyone is having a great time! Safety is without a doubt our #1 priority which is why we have rolled out our "Safety at Play" protocols for a fun, safe visit. This includes the need to purchase your timed tickets online in advance of your arrival. We can't wait to see you here.

*We are open Tuesday-Sunday from 10AM-5PM.







MAYA: Hidden Worlds Revealed NEW Blockbuster Traveling Exhibition

Maya: Hidden Worlds Revealed uses a combination of hundreds of authentic artifacts, immersive environments, multimedia components, and hands-on exhibits. See more than 200 spectacular examples of Maya artistry made by masters of their craft, along with objects from everyday life. Plus, get a peek at the scientific work being carried out at key Maya sites across Central America to understand exactly how we know what we know of the once-hidden Maya of the ancient past. Media Sponsor: Xfinity



Face Mask Decorating
Wednesdays & Fridays | 11:15AM-1:15PM

Join in the fun and channel your inner fashionista while decorating your very own reusable face mask. This fun activity takes place twice a week and will continue while supplies last. While you decorate, you will learn about how face masks help work to keep us safe and why they are so important in the fight to stop the spread of disease. Participants will each get to take home their uniquely designed mask. Masks and decorating supplies will be provided.



Storytime
Daily | 11:30AM & 1PM

Join Connecticut Science Center staff in our Forces in Motion Gallery as they read fun, science-themed, stories to your little ones. It is the perfect break for children 6 and under and is included with your purchase of General Admission or a Connecticut Science Center Membership.

Presented by: ProHealth Physicians Part of OptumCare



Save the Date! Green Gala: Love Science October 3 | Virtual

Join us at the Connecticut Science Center's virtual Green Gala on Saturday, October 3, and support inspiring programs to meet the current and future Science, Technology, Engineering, and Math (STEM) workforce needs of our region. Stay tuned for more event announcements coming soon. Virtual Table Host and Sponsorship opportunities are now available. Presenting Sponsors: Harvest Investments and Travelers



TIMED TICKETS

Must Reserve Online in Advance

- All Visitors, including Members, Guests, and Toddlers must reserve a timed ticket, prior to arrival, to ensure that we are adhering to our on-site capacity. Member tickets are FREE, but you still need to reserve online prior to coming to the Science Center.
- Additional discounts and coupons cannot be accepted at this time.
- We ask that you do not arrive prior to the entry time on your ticket. If you arrive early, please stay in your vehicle or outside on our plaza until the time your reservation begins.

SAFETY AT PLAY New Safety Protocols for Everyone

• There will be a mandatory touchless temperature check prior to entry. The maximum temperature allowed for entry is 100.3.



- Masks covering mouth and nose must be worn at all times (ages 2+).
- Practice safe social distancing by maintaining a minimum distance of 6 feet from other visitors.
- Wash your hands often with soap and water for 20 seconds. Hand sanitizer is also available throughout the building.

Grants and Awards

Space Grant Consortium: PITSCO Education Grants can be found at Kinder Morgan Foundation

The Connection K12 Technology Grant American Vacuum Society (AVS)

https://www.avs.org/Membership/Student-Activities
Arizona State University virtual field trips (VFTs)
https://asunow.asu.edu/content/virtual-field-trips-key-innovative-teaching-asuscientist

Grants and Awards Space Grant Consortium Paragon TEC is developing new STEM-based education material for NASA's Next Gen STEM project based on NASA missions and research. There will be several educator guides geared towards formal and informal educators for middle school-level students and an app development challenge for educators of both middle and high school-level students. We are looking for teachers that represent our country's diverse population of educators and the student populations they serve to evaluate these new offerings. Reviews come with a \$100/activity stipend (up to 9 activities) and a \$200/activity stipend for the App Development Challenge handbook. We will also be seeking educators with access to grade-level students for beta testing content (at home, through digital platforms, or other safe means for interacting with students). Email questions or interested responses to clong@paragon-tec.com.

Pitsco Education Grants Deadline August 31.

https://resources.pitsco.com/pitsco-grant-app Pitsco Education offers a \$350 monthly grant to help make hands-on learning possible. This grant is awarded in the form of a gift certificate that may be used to purchase hands-on STEM products, curriculum, and more from Pitsco. The company invites educators to apply for this grant for their own classroom needs and encourages parents, colleagues, and friends of education to nominate the deserving educators in their lives. Applications are accepted from the first day to the last day of each month. One winner is selected per month at the discretion of Pitsco Education. A recipient may only be awarded one \$350 grant during a 12-month period.

AVS Science Educators/STEM Workshop Deadline August 7 High school teachers can become eligible to receive an equipment grant including a new vacuum pump and vacuum jar for your school when you attend this two-day American Vacuum Society (AVS) workshop. The workshop features high school-ready lessons that integrate science, math, and engineering using hands-on vacuum technology-based activities. It also includes an on-site visit to a major industrial or research laboratory.

Local AVS chapters typically pay travel and lodging costs to send a teacher from their region to this hands-on workshop. After completing it, teachers receive continuing education credit. The next workshop will be held on October 26-27, 2020, in Denver, Colorado.

2020 Bayer Bee Care Blue Ribbon Beekeeper Award' Blue Ribbon **Beekeeper Award** https://beehealth.bayer.us/what-isbayer-doing/bayer-bee-care-youngbeekeeper-award/youngbeekeeper-award Deadline August 21. The Bayer Blue Ribbon Beekeeper Award, sponsored by the **North American Bayer Bee Care** Program, recognizes the next generation of beekeepers (12-18 years old) and their efforts to give back to their communities through activities that support honey bee and pollinator health. The award honors young leaders who have created unique projects on their own or with their local communities to promote and protect bee health for years to come. Each entrant will have the chance to earn a \$3,000 (first), \$2,000 (second) or \$1,000 (third) place prize, which can be applied toward continuing their beekeeping efforts or a college scholarship.



What Is Science Matters? Science Matters is an initiative by the National Science Teachers Association (NSTA) to bring content, news, and information that supports quality science education to parents and teachers nationwide. Science Matters builds on the success of the Building a Presence for Science program, first launched in 1997 as an e-networking initiative to assist teachers of science with professional development opportunities. Building a Presence for Science—now Science Matters—reaches readers in 34 states and the District of Columbia. Why does Science Matter? Science is critical to understanding the world around us. Most Americans feel that they received a good education and that their children will as well. Unfortunately, not many are aware that international tests show that American students are simply not performing well in science when compared to students in other countries. Many students (and their parents!) believe that science is irrelevant to their lives. Innovation leads to new products and processes that sustain our economy, and this innovation depends on a solid knowledge base in science, math, and engineering. All jobs of the future will require a basic understanding of math and science. The most recent ten year employment projections by the U.S. Labor Department show that of the 20 fastest growing occupations projected for 2014, 15 of them require significant mathematics or science preparation to successfully compete for a job. This is why Science Matters. Quality learning experiences in the sciences—starting at an early age are critical to science literacy and our future workforce. Feel free to publish this information in school newsletters and bulletins, and share it with other parents, teachers, and administrators.