

ENGINEERS WEEK NEW ENGLAND



2013 OUTREACH GUIDE

ENGINEERS WEEK NEW ENGLAND

Engineers Week - New England is pleased to present the Outreach Guide for National Engineers Week 2013 - New England.

We hope that you will find it a useful resource throughout the year, both as a source of opportunities for volunteerism, advocacy and support in the engineering community, and as a tool to share with schools and educators to help them find engineering resources in New England.

We encourage you to share the Outreach Guide with your colleagues who would be good matches with the programs highlighted within. A PDF of the guide is available online at www.engineers.org/new or you can request additional print copies by emailing engineersweek@engineers.org.



American Institute of Aeronautics and Astronautics

A simple, compelling philosophy drives our commitment to math, science, and technology education. Make it exciting, make it empowering, and make it fun.

AIAA's far-reaching education programs do just that for college students, K-12 students, and the educators who inspire them. So what are we waiting for? Let's change the world.

AIAA offers and sponsors a wealth of resources to support educators at both the university level and K-12: publications & online tools, classroom grants, our Educator Associate Program, informative aerospace links. The list goes on and on.

University students can join one of more than 145 AIAA Student Branches, which now have over 5,000 members in 45 countries. You'll also find design competitions, scholarships, internships, research help, discounts on textbooks, and more. And for students still in elementary or high school, this is the place to learn about aerospace ... get involved ... get inspired ... and have fun while you do it!

Contact Information:

Web Site: www.aiaa.org

Representative: Anthony Linn, 508-726-9222, ablinn@wpi.edu



ASME

Founded in 1880 as the American Society of Mechanical Engineers, today's ASME promotes the art, science and practice of mechanical and multidisciplinary engineering and allied sciences, with members in over 150 countries. ASME is a not-for-profit membership organization that enables collaboration, knowledge sharing, career enrichment, and skills development across all engineering disciplines, toward a goal of helping the global engineering community develop solutions to benefit lives and livelihoods.

Here's How to Advance Your Career with ASME: Learn new technologies, keep your skills up to date, explore solutions to technical problems, and participate in the development of codes and standards. As an ASME member you can take advantage of extensive professional and personal benefits, most of which are available at no cost or at a substantial discount.

Get the Technical Resources You Need: As a member you will find numerous resources available to you, such as the ASME e-library, the award winning ME magazine and other technical journals, technical courses and emerging technology seminars, technical certification and accreditation programs, and discounted membership in other professional societies.

Network with Your Peers, in Person and Online: As a member you can participate in national technical conferences and meetings. In the Boston area, section members meet for company tours and technical presentations; and student chapters support contests, scholarships, and opportunities for students to move beyond academics. You can find online support in communities of practice, as well as online discussions through social networking sites.

Update Your Skills or Learn New Ones: Through membership you will find short courses, PE/FE exam review, online courses and seminars.

Access ASME Career Resources to Help You Get Ahead: The ASME job board, resume posting service, engineering management certification, and career center can give you the edge necessary in today's competitive market.

Contact Information:

Website: www.asme.org or <http://sections.asme.org/boston>

Phone Number: 1-800-THE-ASME (800-843-2763)

Local Contact: David S. Allen, asme@camihq.com



BSCES Model Bridge Competition

The Model Bridge Competition is jointly sponsored by the Infrastructure Group of the Boston Society of Civil Engineers Section (BSCES) in collaboration with the Massachusetts Department of Transportation's Highway Division.

Participants in the competition construct a model bridge to a given set of specifications using various materials. Each year the materials change, and are announced each October at the contest kickoff. Participants in the 2013 contest used poly-panel foam-board, manila folders, and Loctite power grab adhesive. Approximately 100 students dedicate months of effort to design and build their model bridges. The competition culminates with a panel of local experts judging and testing the bridges for aesthetics, strength and efficiency.

In the 2013 competition, over 30 volunteers from BSCES acted as mentors, volunteers and judges. The coordinators of the Model Bridge Contest are looking for engineers to serve as mentors and assistants for next year's contest, as well as sponsors.

Contact Information:

Web Site: www.engineeryourfuture.org

Phone Number: 781-632-9273

Representative: Michelle Jose, E.I.T. mjose@gpinet.com



BSCES Outreach Program

Every year, the BSCES Outreach Program reaches out to thousands of students from all over New England, running all sorts of field trips, contests, career fairs, engineering activities days, and much more. Please visit www.engineeryourfuture.org to see a more complete catalog of activities. BSCES' Outreach program is recognized nationally by ASCE as one of the best in the country, teaching youth about the influence of engineers through the outreach program's philosophy of "hands-on" learning, mentorship and encouragement towards learning more about engineering fields. As the program continues to grow, volunteers such as yourself are much needed at any of the events and contests coordinated through-out the year. By helping out with the BSCES Outreach Program, you can fulfill the challenge of shaping society as a mentor and a role model.

We visit all grades from kindergarten through high school and college. Presentations to high school students typically discuss career opportunities and the preparation necessary to become an engineer. Presentations to younger students include hands-on activities from the WGBH Design Squad and Tufts Bridge Model Library. In addition, we have flyers, handouts, PowerPoint slides and videos for the program. We also supply a flyer on how to do an outreach visit. This was prepared to answer many of your questions about going out to the schools.

Join the numerous engineers in the Boston area who have taken a small amount of their time to make a big difference in the life of a student.

Contact Information:

Web Site: www.engineeryourfuture.org

Phone Number: 781-632-9273

Representative: Michelle Jose, E.I.T. mjose@gpinet.com



April 12 – 21, 2013

Join the celebration!!

The Cambridge Science Festival is a celebration showcasing the leading edge in science, technology, engineering and math. A multifaceted, multicultural 10-day event every spring, the Cambridge Science Festival makes science accessible, interactive and fun for everyone!

Come to a robot zoo, the Science of Food, a DIY festival, bottle rocket launching, bridge tours, star gazing, and much more!

Our founding collaborators are MIT, Harvard University, the City of Cambridge, and the Museum of Science Boston. Our generous 2013 sponsors include MIT, Biogen Idec Foundation, The City of Cambridge, Momenta Pharmaceuticals, the Massachusetts Cultural Council, MIT's Knight Science Journalism Fellowship, Alnylam, The National Science Foundation, Harvard University, Novartis, Cambridge Community Foundation, Amgen, Blue Cross Blue Shield of Massachusetts, Boston University, Draper Laboratory, IBM, MathWorks, MIT's Lincoln Labs, Alexandria Real Estate, and the British School of Boston.

We take curiosity to a new level!

CambridgeScienceFestival.org



Construction Career Days

More than 1200 high school students attend the Annual Massachusetts Construction Career Days (MassCCD) to learn about job opportunities in the industry, including the construction, engineering and environmental fields with both union and open-shop companies.

The industry faces a shortage of young, qualified workers and MassCCD was created to help address this shortage and to educate high-school students about the wide range of career opportunities available in the construction industry. The event shows students that construction is a great profession - whether their interests lie in math, carpentry, mechanics or science - and that the industry offers rewarding, high-paying jobs.

Exhibitors at MassCCD include construction and related companies, vendors, equipment dealers, labor unions, apprentice programs, colleges, engineers and others. The exhibitors donate their time, equipment and in some cases operators, but beyond that there is no cost to exhibit. This event is a great way to work with state government and industry partners to attract a future work force.

At the event, students will learn how to operate backhoes, excavators, jackhammers, pavers, etc. and participate in concrete finishing, welding, cutting and burning, electrical work, carpentry, laying brick and block, surveying, field engineering and take part in other hands-on activities. As part of the event, there will be three competitive challenges, each with a \$500 prize going to the highest achieving school. The three competitive challenges are the Engineering and Technology Challenge, the Construction Operations Skills Challenge, and the Signature Project Challenge.

Volunteers from exhibitor companies and the operators who staff the exhibits can talk to the students about the skills, training and professionalism they have used to succeed. Students also receive information on colleges, trade schools and certification programs that serve the construction industry. The event gives students the opportunity to learn about the careers in the industry that interest them the most and assistance available to help them achieve their goals.

Contact Information:

Web Site: <http://www.massccd.org>

Phone Number: 413-545-0635

Representative: Karen Dodge, MTAP1@live.com



DIGITS

Figure this. Imagine that.

DIGITS is a sixth-grade classroom program that pairs STEM (science, technology, engineering, and math) professionals –called STEM Ambassadors - with sixth grade classes across the state to increase students' interest in math and science subjects and careers. Science Magazine and Education Week both report that the biggest determinant for kids choosing STEM careers is not their performance/grades in math and science – but whether or not their interest has been “sparked.” DIGITS volunteers have the potential to spark that interest!

DIGITS Volunteers Achieve a Meaningful Impact

Over the last three years of DIGITS implementation in schools across Massachusetts:

- 409 volunteers participated from 90 STEM companies, state agencies, universities and other organizations
- Volunteers interacted with 36,273 sixth-grade students across the state
- Students showed a significant increase in their interest in math/science and their knowledge of STEM careers, and greater interest in STEM-related after-school activities as a result of the DIGITS volunteers.

DIGITS Provides Program Materials and Support for Volunteers

DIGITS provides volunteers with training, interactive classroom materials, and a guide/outline for managing the classroom experience. The program matches volunteers to a school near where they live or work. Volunteers are responsible for completing a 1 hour training session, preparing a 15-minute presentation about their job and career, and scheduling a visit to the assigned school at a time convenient for both the teacher and the volunteer.

Engineers: Make a positive impact on potential engineers and share your personal career story with students! Sign up to be a DIGITS STEM Ambassador at www.digits.us.com !

Contact information:

Web site: www.digits.us.com or www.engineers.org (DIGITS Program)

Joyce L. Plotkin
DIGITS Founder and CEO
617-694-7309
joyce@digits.us.com

Carol S. Greenfield
DIGITS Chief Operating Officer
617-872-8602
carol@digits.us.com

The Engineering Center Education Trust (TECET) (www.engineers.org) serves as the host organization and fiscal agent for DIGITS.



DOME Foundation – Diversity and Outreach in Math and Engineering

Our mission: To broaden awareness of and to increase participation in the science, technology, engineering and mathematics (STEM) disciplines by underrepresented populations to meet the needs of a globally competitive workforce.

The DOME Foundation will develop outreach programs targeted to underrepresented youth and educators to support a future where young people understand their potential; are offered ways to develop and explore their interests; and are given the means to pursue meaningful opportunities in STEM-related fields. DOME envisions targeting youth through collaborative programs with professional societies, business, higher educational institutions, and the K-12 educational system.

Contact Information:

Web site: www.domefoundation.org

Phone Number: 508-395-0676

Representatives: Larisa Schelkin, larisa@DOMEfoundation.org

Dr. Noreen Radke Sharpe, sharpen@babson.edu



EDC'S CENTER FOR SCIENCE EDUCATION

Education Development Center, Inc. (EDC), Newton, Mass., is one of the world's leading nonprofit education research and development organizations. Since 1958, when a group of MIT scientists joined forces with teachers and technical specialists to develop a ground-breaking high school physics curriculum known as *PSSC Physics*, EDC has been developing exemplary elementary and secondary science curricula for both formal and informal education.

Over the past decade, the Center for Science Education (CSE) within EDC has continued this prominent role in addressing STEM (science, technology, engineering, and mathematics) issues nationally, focusing on pre-K through grade 12. Recently, CSE has developed several outstanding technology design curricula, including *A World in Motion II*, funded by the Society for Automotive Engineers (SAE), which targets middle-grades students in school, and *Design It!*, funded by the National Science Foundation, which targets students in grades 2–5 in after-school programs. Each of these programs includes extended investigations that encourage the development of basic engineering principles, exemplifies the design process, and nurtures problem solving and creativity. While SAE distributes its own curriculum, EDC invites other corporate sponsors to underwrite the dissemination of the *Design It!* program, which could have a widespread impact on the engineering skills of young people in after-school programs in New England.

Contact Information:

Web Site: cse.edc.org

Phone Number: 617-618-2573

Representative: Bernie Zubrowski, bzubrowski@edc.org



Engineering Education Service Center

Maximize your Impact on Science, Technology, Engineering, and Math Education! The Engineering Education Service Center (EESC) is an engineering education company that specializes in providing products for K-12 schools to teach and share the fun of engineering. From curriculum to books, DVDs, posters, T-shirts and other motivational products, we aim to make engineering understandable and accessible to everyone.

The mission of the Engineering Education Service Center is to provide, or help you provide, information resources to promote, guide, and stimulate interest in Science, Technology, Engineering and Math (STEM) with a particular emphasis on Engineering. We seek to diversify the types of engineers in society by exposing large numbers of students to the capacity they will have to benefit society.

The EESC has over 12 years experience writing books, manuals, and curriculum to support programs that encourage, motivate and inspire our youth to consider careers in engineering. The EESC can help you meet or exceed your goals, add value to your events or programs, and increase the sustainability of your program.

Contact Information:

Web Site: www.engineeringedu.com

Phone Number: 541-988-1005

Representative: Celeste Baine, celbaine@engineeringedu.com



ENGINEERS WITHOUT BORDERS-USA BOSTON PROFESSIONAL CHAPTER

Engineers Without Borders – Boston Professionals

The mission of Engineers Without Borders - Boston Professionals (EWB-Boston) is to improve the quality of life of disadvantaged communities throughout the world through the implementation of small-scale, sustainable engineering projects.

EWB-Boston is committed to working locally as well as internationally. Chapter activities within the last year include the Charles River Clean-Up, volunteering at the Greater Boston Food Bank and at Habitat for Humanity. We currently have two drinking water projects-one in Honduras and one in Kenya. Please visit www.ewbboston.org for more information.

Local meetings are in Boston at least once a month (typically on the fourth Wednesday) and are open to all types of engineers (and non-engineers). There is plenty of work involving almost every discipline of engineering.

Let us know if you're interested in getting involved!

Contact Information:

Web Site: www.ewbboston.org

Phone Number: 617-452-6373

President: Ravi Bandi, president@ewbboston.org



FIRST: For Inspiration and Recognition of Science and technology

From its beginning in 1992 with 28 teams in a New Hampshire high-school gym, to reaching over 150,000 kids and the *FIRST* Championship held in the Georgia Dome in Atlanta, *FIRST* has a rich history. Their mission is to inspire young people to be science and technology leaders by engaging them in exciting mentor-based programs that build science, engineering and technology skills, that inspire innovation, and that foster well-rounded life capabilities including self-confidence, communication, and leadership.

FIRST Robotics Competition (FRC) is a unique varsity sport of the mind designed to help high-school-aged young people discover how interesting and rewarding the life of engineers and researchers can be. The *FIRST* Robotics Competition challenges teams of young people and their mentors to solve a common problem in a six-week timeframe using a standard "kit of parts" and a common set of rules. Teams build robots from the parts and enter them in competitions

FIRST offers many programs for kids in elementary, middle and high school. To create or join a team, please visit the FIRST website at: www.usfirst.org.

Contact Information:

Web Site: www.bostonfirst.org (local)

www.usfirst.org (national)

Representative: Mikell Taylor, mikell@bostonfirst.org



Future City

Future City is a competition that urges middle school students to dig deep into their imaginations and create a dream world, and then switch hats to show the world that through innovative technology and engineering, their dream world is possible. The students initially create their world using Sim City 4 software and then build a scale model of a section of their city using recycled products. The students prepare a presentation and brainstorm answers to any question people might ask about their creation. In addition, students are asked to answer an essay question typically aimed at encouraging them to think of a way to make the world a better place. This year, they were asked to develop clean solutions to manage stormwater runoff pollution.

It started up in the summer (though most schools didn't start until the fall), and winded up the weekend after Martin Luther King Day regionally, and one team went to the finals in Washington DC. In the past, the winners have met the President. The winners also get to go to Space Camp.

The competition is supported by various engineering firms and other businesses and organizations. We are always looking for engineers to serve as mentors to the student teams or recruit new schools to participate. Engineers can also serve as judges during the regional competition. Contact Future City to find out how you can get involved in next year's competition.

Contact Information:

Web Site: www.futurecity.org or www.engineeryourfuture.org

Phone Number: 617-240-7979

Representative: Reed Brockman, P.E. reed.brockman@aecom.com; Michelle Jose, E.I.T. mjose@gpinet.com



Miscellaneous Robotics Competitions

GEARS, Inc. has volunteered to act as a liaison to the numerous robotics competitions underway across New England.

There are numerous contests using just as many systems and platforms, be they within the realm of First Robotics or Battlebots or Firefighting.

Gears, Inc. has developed a system that serves as an introduction to robotics generally applicable to any challenge.

Students can design prototypes, test and build working modules, mechanisms and machines while working at their workstations. No special tools are required.

The GEARS Invention & Design System is also considered the most robust robotics system available to educators. That is why many schools use GEARS IDS as a trainer for national robotic competitions. It is sturdy enough to add your own manipulators, actuators, cameras, sensors or fabrications. The GEARS kit integrates perfectly with the BASIC Stamp microcontroller or RC controls. Free on-line projects are available as well as 3D models and curriculum support material mapped to national standards.

Contact Information:

Web Site: www.gearseds.com

Phone Number: 781-878-1512

Representative: Mark Newby, mnewby@gearseds.com



Habitat for Humanity – Boston & South Shore Chapters

Habitat for Humanity is a volunteer-driven, non-profit organization whose participants represent many different backgrounds, bound by the common goal of helping people own decent homes. The organization works in partnership with families, volunteers, congregations and community and business leaders to make basic housing a reality for local families in need in Massachusetts.

Habitat homeowners make their down payment in the form of sweat equity—contributions of labor and commitment to the construction of their new homes—in a unique partnership program that enables Habitat for Humanity to build a community as it builds homes.

Volunteers serve as the heart and soul of the organization. If you have a special skill and/or a passion for others, we would love to have you work with our organization. We especially are looking for engineering and surveying professionals to help find land and obtain necessary building permit approvals. A small commitment of your time can make a tremendous impact on our community.

Contact Information:

Web Sites: www.habitatboston.org; www.sshabitat.org

Phone Number: 781-843-9080 Ext. 18

Representative: Mia Mercado, Volunteer@sshabitat.org



IEEE Boston Section

IEEE's core purpose is to foster technological innovation and excellence for the benefit of humanity. The IEEE is the world's largest technical professional society with over 390,000 members worldwide. There are over 40 technical disciplines within IEEE including; aerospace and electronic systems, computer, communications, engineering in medicine and biology, social implications of technology, and signal processing, to name a few. The IEEE offers a variety of benefits to its members. These include discounts on our conference and course fees, a variety of group insurance options, access to our vast library of technical papers and journals and much more.

The local IEEE Boston Section has over 8,500 members of which almost 700 are student and graduate student members. We offer more than 40 short courses each year. In 2010 we will offer three topical conferences locally. The IEEE Conference on Innovative Technologies for an Efficient and Reliable Electricity Supply will be held September 27 – 29. The IEEE International Symposium on Phased Array Systems and Technology will be held on October 12 – 15 and the IEEE Conference on Technologies for Homeland Security will be held on November 8 – 10. All three conferences will be held at the Westin Hotel, 70 Third Avenue, Waltham, MA. In addition, we offer over 100 free technical chapter meetings each year in and around the Boston area.

The IEEE Boston Section has a group of dedicated volunteers that plan and organize the local activity. If you are looking to become engaged in a professional society, please contact us to become an active volunteer for the IEEE.

Contact Information:

Web Site: www.ieeeboston.org

Phone Number: 781-245-5405

Representative: Bob Alongi, sec.boston@ieee.org



Kids' Science Challenge (KSC)

How do you get a ten year old turned on to science and engineering? By empowering them to submit their own answers to some of the questions scientists deal with every day, such as, how to come up with a new kind of skateboard, create a new musical instrument, or design a package that never has to see a landfill. The Kids' Science Challenge is a free, nationwide science competition for 3rd to 6th graders, made possible by the National Science Foundation. Students can participate in the competition as individuals or in collaborative groups in the classroom or after-school programs. The first 1,000 entrants will receive a hands-on science activity kit. After the submissions are judged by a panel of educators, scientists and engineers, a grand prize is awarded to a winning student (or team) in each of three science topics. All grand prize winners win a trip to visit and collaborate with a scientist or engineer to see their idea come alive! There are also many cool runner-up prizes including science kits, microscopes and trips. The Kids' Science Challenge inspires 3rd to 6th graders to discover a well-kept secret: science is cool!

Information on how to enter the competition, games, videos, lesson plans and a full listing of prizes and sponsors can all be found at www.kidsciencechallenge.com.

Contact information:

Website: www.kidsciencechallenge.com

Phone Number: 845-338-0464

Representative: Jim Metzner, jim@pulseplanet.org



Machine Science

Machine Science's mission is to open up the world of digital technology to young people by enabling them to complete sophisticated engineering projects. We provide schools, community centers, museums, and other organizations with the equipment, curriculum, and support that they need to offer hands-on engineering programs for middle-school and high-school students.

Our carefully designed project kits and curriculum materials give students first-hand experience with the hardware and software that professional engineers use to create modern electronic equipment. These guided projects are suitable for use as classroom activities or for use in after-school programs. We actively support our project kits and curriculum materials with training workshops and on-site assistance, tailored to the specific needs of educators and after-school program providers.

Contact Information:

Web Site: www.machinescience.org

Phone Number: 617-354-7171

Representative: Sam Christy, sam@machinescience.org



MAES

MAES was founded in Los Angeles in 1974 by a group of professional engineers to advance and increase the number of Latinos in science, technology, engineering, and mathematics (STEM) by creating opportunities and fostering recognition through its professional, technical, and outreach activities. MAES is a 501(c)3 non-profit corporation.

Mission

To promote, cultivate, and honor excellence in education and leadership among Latino engineers and scientists.

Science Extravaganza

MAES Science Extravaganza is a one-day, hands-on academic enrichment experience for middle and high school students. Held all across the nation by MAES' professional and student chapters, this event is ideal for sparking an interest in Science, Technology, Engineering, and Mathematics (STEM) among younger students. The event consists of workshops and activities presented by volunteer professionals, professors, and college students across a wide range of technical and scientific fields.

Science Extravaganza is one of MAES' many programs and events to reinforce the benefits of higher education. The overarching goal is to create awareness of STEM among Pre-College students resulting in a greater number of Latinos completing high school and pursuing college education.

For Kids

- Explore Careers in STEM
- Have Fun While Learning
- Interact with College Students
- Meet Science and Engineering Role Models
- Tour a University Campus
- Win Exciting Prizes

For Parents and Teachers

- Explore Careers in STEM
- Find Out About Financial Aid and Scholarships
- Meet Guest Speakers and Role Models
- Support Your Child's Education
- Tour a University Campus

Contact Information:

Web Site: www.maes-boston.org

Phone Number: 617-258-2564

Representative: Bob Martinez, president@MAES-Boston.org



MATHCOUNTS

MATHCOUNTS (MC) is a nationwide annual math competition for 6, 7 and 8th graders. Now in its 27th year, it is administered locally by the Massachusetts Society of Professional Engineers (MSPE). The MATHCOUNTS Foundation is primarily supported through the generous tax deductible contributions of individuals, corporations, associations and foundations.

This program is intended to encourage students to consider careers in engineering; however, the competition experience can also build basic math problem-solving skills for other math tests, such as the MCAS. The tests cover math topics such as algebra, geometry, trigonometry and probability.

Every February the test competitions are held at the six MSPE chapter locations. Students compete both as individuals and as part of a school team. Top finishers from the six chapters move on to the State competition held in March. The top four individual finishers then represent the State at the National Competition in Washington, DC (All expenses paid). Past years involvement was 80 schools participated statewide as part of 6,000 schools nation-wide.

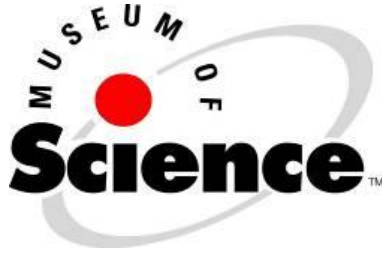
MATHCOUNTS is looking for volunteers to assist the day of the competition at six test sites throughout the state. Duties range from room setup to test proctoring and scoring the exams (answers provided!). The day's program usually lasts about four hours. Please contact the MSPE representative listed below if you are interested.

Contact Information:

Web site: www.mathcounts.org

Phone Number: 703-299-9006

MSPE contact: Dan O'Brien, PE, dan.obrien@mwra.state.ma.us
or 617/660-7680.



Museum of Science

The mission of the Museum of Science, Boston is to stimulate interest in science and technology and to demonstrate their importance for individuals and for society. To accomplish this educational mission, the staff, volunteers, overseers and trustees of the museum are dedicated to offering activities, exhibits and programs that will encourage curiosity, questioning and exploration; inform and educate; enhance a sense of personal achievement in learning; respect individual interests, backgrounds and abilities; and promote life-long learning and informed and active citizenship. The Museum of Science features a variety of volunteer opportunities. Volunteers help to involve visitors in activities, exhibits and programs.

Engineers can also become involved in some of the exciting engineering technology initiatives that are part of the National Center for Technical Literacy at the Museum. PowerUP!, a high school and community college project, is focused on increasing engineering programs at the secondary and post secondary level; Education is Elementary is an exciting engineering series for elementary school age youth using global challenges and hands on activities to spark an interest and understanding of the technical world around us. Engineering the Future is a high school curriculum developed to meet state engineering technology standards and presented through the lens of an engineer.

Opportunities for engineers to participate in K-12 engineering technology education range from advisory to classroom applications.

Contact Information:

Web Site: www.mos.org

Phone Number: 617-589-0380

Representative: Valerie MacEachern, vmaceachern@mos.org



Rebuilding Together Boston, INC. (RTB)

In its second decade of operations, Rebuilding Together Boston, Inc. (RTB) works in partnership with skilled and unskilled volunteers, skilled labor and the community to repair and rehabilitate the houses of low-income homeowners, non-profit-owned facilities and civic sites in the City of Boston. We do this at no cost to our recipients. RTB preserves home ownership and affordable housing, reduces the risk of homelessness, and stabilizes and revitalizes neighborhoods. Our objective is to improve the quality of life for those we serve including their safety, security, warmth and independence.

For every dollar donated by foundations, corporations and individuals, the organization traditionally leverages some three to four dollars in donated labor, supplies, equipment and other project-related costs. RTB's work is carried out through its: Year-Round Program, Special Service Days (May through October for companies, schools, organizations and other groups) and National Rebuilding Day (NRD). Our largest program, NRD, takes place the last Saturday in April each year and engages over 500 volunteers in a day of service to the community.

To date, RTB has made repairs, often top to bottom, for over 350 homes and non-profit facilities with an estimated value of our work at \$6.5 million. Over 20,000 volunteers have participated in service days. Our non-profit recipients have included: Pine Street, Inn, South Boston Boys and Girls Club, AIDS Action Committee, Haitian Multi-Service Center, Little Brothers Friends of the Elderly and Bethel AMC School and Church. RTB has received the "Battlefield Citation Award" from the New England Center for Homeless Veterans for major renovation work on the Center's Main Hall and Retail Store for veterans. In 2011 and 2012, the organization was selected by the New England Patriots as an outstanding non-profit as part of their volunteer recognition program to honor the memory of Myra Kraft.

How you can help: Sign up your company, organization, group, or volunteer yourself, for a project day; serve as a site's Project Supervisor or House Captain; serve on a committee; help with events and/or make a donation to help us purchase project-related needs.

To learn more, volunteer, donate supplies and equipment or support our work –

Contact Information:

Rebuilding Together Boston, PO Box 301209, Jamaica Plain, MA 02130

Representative: Simone Auster, President

Phone: 617-971-0058 Website: www.rtboston.org;

Email: info@rebuildingtogetherboston.org;

Join us on social media: <https://www.facebook.com/pages/Rebuilding-Together-Boston/283744981633>; <https://twitter.com/RTBos> ; <http://pinterest.com/RTBoston/>

RE-SEED

Retirees Enhancing Science Education through Experiments and Demonstrations (RE-SEED) is a Northeastern University program that prepares engineers, scientists, and other individuals with science backgrounds to work as volunteers, providing in-classroom support to K-12 science teachers. RE-SEED volunteers work closely with the host science teachers to help them enrich and implement their school curriculum.

After completing a comprehensive free training program, participants volunteer in K-12 classroom on a regular basis. Since RE-SEED began in 1991, close to 700 RE-SEED volunteers have worked in schools in about 100 communities throughout the country offering about 700,000 hours of their time.

RE-SEED holds training programs throughout the country, with the majority of them in Massachusetts. The Boston RE-SEED Center has 81 volunteers serving in the Greater Boston Area. If you are interested in learning more about the program or to volunteer please call Paul Conroy at 17-373-8388 and visit our website, www.reseed.neu.edu.

Contact information:

Web Site: www.reseed.neu.edu

Phone Number: 617-373-8388

Representative: Paul Conroy, Pa.conroy@neu.edu



Salem Cyberspace

Salem CyberSpace is a non-profit academic learning center with a mission to expand the academic and career opportunities for low-income older youth. Our goal is to provide innovative and quality programs to increase our students' engagement in learning and to develop an intellectual curiosity in the world in which they live. We want all of our students to graduate from high school and go on to post-secondary education in order to enter a career with a sustainable wage.

To achieve this mission, Salem CyberSpace offers two programs: Academic Learning Center(ALC) and College Success. Staff works with youth to improve their academic performance, to teach them to problem-solve, to become more literate in English and computers, to explore their creativity, to flourish within a diverse population, and to develop workplace skills. We are successful if our students graduate from high school as self-confident, self-sufficient and productive members of their community. At the ALC, we offer a variety of activities in STEM, Arts and Career and College. STEM activities include Science Scouts, a weekly program that has students participating in hands-on chemistry, biology and engineering activities. Technology Days includes building computers and working with robotics. Digital arts programs introduce students to Photoshop and Web/Graphic Design and Video/Photography. Middle school students have the opportunity to compete in competitions such as Future City or Zero Robotics. As part of the College and Career program, students will learn about different careers, money management and everything they need to prepare for college – this includes a Career Launch program as well as college tours and educational field trips.

The mission of College Success is to enable all of our students to complete post-secondary education so that they may continue independently on their journey to higher learning and rewarding careers. College Success staff provide low-income students in Salem with high-quality integrative educational and advisory services for college preparation, college admission, college success, and career exploration. In addition, counselors continue to work with students through college graduation providing advisory services and mentoring throughout their college years.

Currently 100% of active participants graduate high school , 95% go on to college and 90% stay in college. Salem CyberSpace serves over 150 youth per year.

Contact Information:

Web site: www.salemcyberspace.org

Phone number: 978-740-6667

Representative: Linda Saris, lsaris@salemcyberspace.org



Science Clubs for Girls

Science Club for Girls' after-school science clubs, with a particular focus on serving the diverse populations in Cambridge, Boston, Newton and Lawrence, bring women scientists, engineers and girls together in a fun, nurturing and interactive learning environment.

Female volunteer-mentors work in pairs to present fun, hands-on science and engineering activities for groups of 8-12 girls. We provide our volunteers with training, support, supplies, and a flexible and diverse curriculum specifically designed for girls. During their years with our project, girls move from the science and technology clubs in grades K-7 to different stages of increased leadership, responsibilities, and technical and scientific job training and mentorship. Our Junior Mentor program has allowed girls in 8th to 12th grade to learn technical and scientific skills such as testing, creating and leading hands-on science activities, building web sites, creating videos and documentaries on scientific topics, and writing and publishing books on women scientists and engineers. Teen girls gain technical and 21st century skills through our Rocket Team, Mobile App Team, Media Team and related programs.

The young women in the program need women mentors with an interest in promoting the participation of young girls in science, engineering or technology in our after-school science clubs. We also seek field trip host sites and offer one time volunteer opportunities from guest speakers to outreach events. You can help us create an environment where girls see themselves as potential scientists, engineers and future leaders.

Contact Information:

Web Site: www.scienceclubforgirls.org

Phone Number: 617-391-0361

Representative: Allison Smith, volunteer@scienceclubforgirls.org



Society of Women Engineers

Society of Women Engineers (SWE) - Boston Section

The Society of Women Engineers (SWE) is a not for profit educational and service organization that empowers women to succeed and advance in the field of engineering and to be recognized for their contributions as engineers and leaders. The Boston Section was one of the four founding Sections of SWE in 1950. SWE has since grown to have over 20,000 members in 100 sections and 300 student sections, with Boston as one of the largest, with approximately 350 members. SWE's motto "Aspire, Advance, Achieve" is the driving force behind an exciting array of training and development programs, networking opportunities, scholarships, outreach and advocacy activities, and much more.

Outreach at SWE Boston

The Summer 2011 issue of the SWE Magazine discussed the percentage of engineering degrees attained by gender reported by the American Society for Engineering Education. Approximately 17% to 23% of engineering degrees are awarded to women. SWE Boston is dedicated to encouraging girls to pursue a career in engineering. One event held by SWE is *Wow! That's Engineering!* At this event students spend a Saturday doing hands-on activities, like building solar cars & airplanes, learning about invisible forces, listening to inspirational speakers, and taking apart commonly found electronics. SWE Boston also has a new *Robotics Course* teaching the Python programming language to students to make a scribbler robot perform basic behaviors - like draw a triangle and solve a maze. Further SWE Boston started a new series called *Celebrate Women in STEM* that recently featured NASA Astronaut Dr. Cady Coleman, who spoke of her experiences working 6 months on the International Space Station. Finally, SWE Boston also recognizes students excelling in science and math by sending Merit Certificates to schools in the Boston area and providing donations to the region Science Fairs.

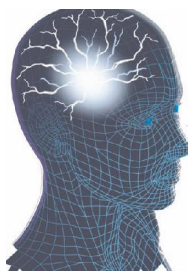
Signup to be on the mailing list at <http://sweboston.org>

Contact Information:

Website: <http://sweboston.org>

Email: swebos@sweboston.org

Representative: Cherie Cain





ThinkFest

ThinkFest began in 2007 as a way to get students to better understand the world of engineering. At this event, scheduled for late October every year, students from all grades engage in over two dozen hands-on activities, originating from a myriad of sources.

Students show up on a Saturday and earn points gauged upon levels of design achievements, and cash in for prizes. Activities are run by engineers from all over New England and professors from the School of Science and Engineering at Merrimack. Between each workstation are members of engineering related student groups from many of New England's best schools, showing off their activities. This event was founded jointly by Merrimack College, Construction Career Days, E-Week and the BSCES solely to introduce young minds to the exciting world of engineering.

College groups are needed to show off their stuff! Engineering firms are needed to sponsor and host activities! And teachers – make sure your students do not miss this one!

Contact information:

Web Site: engineeryourfuture.org

Phone Number: 978-837-5299 and 617-632-9273

Representative: Jean Reynolds, reynoldsj@merrimack.edu or
Michelle Jose, mjose@gpinet.com



TRIG-STAR

WHAT IS TRIG-STAR?

A High School Trigonometry Skill Awards Program Administered by the National Society of Professional Surveyors

WHY IS IT IMPORTANT?

- Trig-Star promotes the study of trigonometry in high school and promotes by honoring individual students who have demonstrated superior skill among classmates at the High School level.
- Trig-Star demonstrates the use and practical application of trigonometry in the land surveying profession to high school trigonometry students.
- Trig-Star creates awareness of the land surveying profession among the mathematically-skilled high school students, career guidance counselors and high school math teachers.

WHAT YOU DO

1. Volunteer to contact the High School in your neighborhood by providing the information below to our Trig-Star Coordinator, Cliff Rober, at rsurvey@aol.com or call him at 781-648-5533
2. Receive and review the Trig-Star Contest Packet.
3. Contact the High School to coordinate a day and time for the contest.
4. Introduce the contest by discussing the surveying profession and its use of mathematics.

MORE INFORMATION

Only one TRIG-STAR contest is allowed per high school per year. We'll mail a contest packet with contest instructions, a test packet, and a sample news release to you. There are additional resources at:

<http://www.nspsmo.org/index.cfm?fuseaction=Page.viewPage&pageId=522>

You, as the local sponsor, will need to make all the local arrangements with the high school. The winning student will be eligible to compete in the NSPS National Trig-Star Contest. The packet includes national contest information.



Transportation YOU

A joint initiative of:



United States
Department of Transportation



WTS-Boston Transportation YOU Program

Transportation YOU is a joint initiative of Women's Transportation Seminar (WTS) International and the United States Department of Transportation that launched with the 2010 signing of a Memorandum of Understanding by US Secretary of Transportation Ray LaHood. With this initiative, WTS chapters make a difference in the lives of young girls ages 13 – 18 by offering programs and activities that will spark their interest in all modes of transportation and encourage them to take courses in science, technology, engineering and math (STEM) which are the stepping stones to exciting careers that can change the face of the transportation industry.

WTS-Boston will be hosting various Transportation YOU activities throughout the 2012-2013 school year, including transportation tours, site visits and hands-on educational events. Additionally, WTS-Boston offers a Transportation YOU mentoring program for young girls interested in pursuing a career in the transportation field.

To learn more, please visit the Transportation YOU website at www.transportationyou.org. Contact WTS-Boston to find out how you can get involved and participate in the various Transportation YOU events planned in the Boston area.

Contact Information:

Website: www.transportationyou.org

WTS-Boston Representatives: Kathryn Stanchak, Kathryn.Stanchak@dot.gov
Rebecca Williamson, rwilliamson@gpinet.com
Caroline Ducas, ducas@pbworld.com



Tufts University – Center for Engineering Educational Outreach/Tufts Bridge Library

The Center for Engineering Educational Outreach at Tufts University is dedicated to bringing engineering into the k-12 classroom. Using the model of engineering design projects, the center coordinates engineering and education experts with teachers to design curricula based on engineering programs.

Engineers who are interested in supplying support for programs that bring engineering, science, math, design and innovation to schools would make excellent CEEO partners. Partners not only reap the philanthropic benefits of helping children learn, but they also ensure that their future employees are intelligent, inquisitive and inventive.

As a tool for teaching k-12 students about bridges, Dr. Brian Brenner has created a library of bridge models that assemble in a way that follows actual bridge construction, and can be brought to schools by BSCES Outreach volunteers.

Contact Information:

Web Site: engineering.tufts.edu/cee/bridges

Phone Number: 617-627-5888

Representatives: Brian Gravel, Brian.gravel@tufts.edu

Reed Brockman, reed.brockman@aecom.com

West Point



Bridge
Design
Contest

West Point Bridge Design Contest

Known locally as the Ralph Salvucci Online Bridge Design Contest, this nationwide competition aimed at promoting math, science and technology education in U.S. elementary and secondary schools.

Entrants download a free design program and attempt to create the lowest price bridge capable of carrying a truck. Anyone is welcome to compete in the competition, but to be eligible for national prizes you must be a U.S. student age 13 through high school senior. The BSCES held its first annual local contest within this nation-wide competition in 2004. The local competition is open to all K-12 students in Massachusetts. Hundreds of prizes and certificates are given out to students from all corners of Massachusetts. The contest concludes with a large banquet scheduled for May 9th this year.

The West Point Bridge Design Contest has the following goals:

- Provide participants with an opportunity to learn about engineering through a realistic, hands-on design experience.
- Provide participants with an opportunity to use the computer as a problem-solving tool.
- Provide engineers with an opportunity to share their knowledge and experience with students.

Volunteers are needed to assist with mentoring and administration of the local contest.

Contact Information:

Web Site: www.engineeryourfuture.org

Phone Number: 617-632-9273

Representative: Michelle Jose, mjose@gpinet.com



WGBH

How do you get kids excited about engineering? Give them the opportunity to try fun, kid-friendly activities with engineers—like you! WGBH, Boston's public television station, has developed numerous multimedia engineering programs—including Design Squad Nation, Fetch! With Ruff Ruffman, and Engineer Your Life, as well as some old favorites - Zoom into Engineering and Building Big.

Engineers can use Design Squad Nation and FETCH! activities in schools, after school, libraries and malls to encourage kids to do the things that engineers do: ask questions, pursue ideas, look for multiple solutions and solve problems collaboratively. These programs introduce kids to engineering and help give them the skills necessary to thrive in our increasingly technological world.

Engineer Your Life (audience: high school girls) is a web site and campaign that encourages girls to consider pursuing engineering as a career. Go to the web site (www.EngineerYourLife.org) to view streaming video of inspiring women engineers and descriptions of dream engineering jobs. Printed materials to distribute include postcards and brochures that are ideal for those talking with high school girls (and boys) about engineering.

Design Squad Nation (audience: middle school kids) The six Design Squad activity guides present a collection of fun, open-ended activities that can be done with kids no matter how much time you have. The flexible design of the guides allows you to introduce kids to the basic physical science of engineering and the excitement of inquiry learning. Be sure to go online to watch episodes at pbskids.org/designsquadnation.

FETCH! (audience: 6 to 10-year-olds) Looking for engaging hands-on science activities to lead with kids? Then check out the FETCH web site where you'll find activities and online games for the kids and a quick, yet comprehensive online training for you - the adult leading the activities. Find tips on how to run an afterschool club, supplement classroom learning, or just have some fun on the weekend. You can find it all at: pbskidsgo.org/fetch.

To order printed copies of the Design Squad Nation, FETCH, or Engineer Your Life resources, contact Anna Hohos at WGBH.

Contact Information:

Web Site: pbskidsgo.org

Phone Number: 617-300-3888

Representative: Anna Hohos, anna_hohos@wgbh.org



Young Professionals in Transportation (YPT)

Young Professionals in Transportation (YPT) is a new and rapidly growing national organization aimed at providing career guidance, fellowship, and networking opportunities for young professionals and students in the transportation field. The National chapter of YPT is located in Washington DC and started in 2007. The Boston chapter is the first regional YPT chapter in the country, founded in 2010.

Our goals are threefold:

Professional Development: Provide a regular series of seminars from leading individuals or teams in the transportation field.

Fellowship: Provide an ongoing forum for mutual support and interaction between young transportation professionals, especially for those starting their careers.

Networking: Provide networking opportunities and seminars to help young professionals advance their careers and share innovative ideas.

Membership to YPT is open to all transportation professionals around the world. We DO NOT have an age-restricted definition of “young” in YPT. Anyone is welcome to participate in our activities.

Interested in supporting and participating in YPT events? Want to get on the mailing list? Sign up by visiting www.yptboston.org

Contact Information:

Facebook: www.facebook.com/YPTBoston

Twitter: @YPTBoston

Representative: Christine Breen, yptboston@gmail.com