Happy New Year!

Welcome to the start of a brand new semester. 2017 will be an exciting year for STEM enrichment activities in Maryland. Every middle school math or science class is invited to enter into the JHU Tower of Power competition. January’s newsletter has updates on important deadlines, events, and local teacher training opportunities.

Enjoy,

Center for Educational Outreach Team

Upcoming Programs and Events

Maryland Junior Science and Humanities Symposium (JSHS)

High school students present the results of their original research efforts before a panel of judges and an audience of their peers at regional symposia.

Maryland high school students who apply and are selected for this event can participate either as a presenter or as a student delegate. The top three regional scholarship finalists at the Maryland Regional JSHS are awarded academic scholarships, ranging from $1,000 to $2,000. In addition to receiving scholarships, the top five presenters will be invited to compete at, and will attend the 55th annual National JSHS in San Diego, California, which is scheduled for April 26-30, 2017.

Deadline to submit: January 13, 2017

Visit Maryland JSHS for details. You may also contact jshsterp@umd.edu, 301.405.8467, for Maryland event information.

Tower of Power in your Classroom!

Join Johns Hopkins University's Whiting School of Engineering in celebrating National Engineers Week (February 19-25, 2017) by building a tower from spaghetti and marshmallows. The tallest freestanding tower wins!
The winning middle school team will be invited to JHU's Tower of Power competition on February 21, 2017 to build their tower again and compete with undergraduate students, alumni, and faculty teams.

Email STEMOutreach@gmail.com to submit your intent to participate by January 17, 2017!

Entries are due February 7, 2017.

For complete details visit: http://engineering.jhu.edu/outreach/get-involved/tower-of-power/

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**Maker Foundations**

Digital Harbor Foundation's Maker Foundations program is an introductory course for middle and high school youth. Enjoy 14 weeks of exploration into emerging technology topics where you will design and 3D print your own creations, learn to program games and make your own game artwork, make a website, create interactive electronics, and much more!

Maker Foundations runs two days a week, either on Monday and Wednesday or Tuesday and Thursday, from 4pm-6pm. Doors open at 3pm and a hot meal is served from 3:15-4:15pm.

**Deadline for application:** January 20, 2017  
**Program starts:** February 13, 2017  
**Location:** Digital Harbor Foundation  
1045 Light Street, Baltimore, MD 21230

For more information visit: http://www.digitalharbor.org/maker  
Contact: 443.681.9384 or email contact@digitalharbor.org

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**FIRST LEGO League**

Judges are needed for FIRST LEGO League Baltimore City qualifier. Baltimore City elementary school students research a real-world engineering challenge, develop a solution, and compete with LEGO-based robots of their own design. Judges interview and evaluate teams based on listed criteria and deliberate as a group to decide the teams most deserving for trophies. Both technical and non-technical skills welcome. Robotics background not required. Training materials available in advance on-line & orientation on-site. All FIRST events are free and open to the public.

**Date:** January 21, 2017  
**Time:** 7:30AM - 4:00PM  
**Location:** Baltimore IT Academy, 900 Woodbourne Avenue  
**Volunteer Sign-up:** https://firstinmaryland.org/first-lego-league-program/volunteer

For more information visit: https://firstinmaryland.org/first-lego-league-program/maryland-fll-qualifiers

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**Engineering Innovation**
Engineering Innovation (EI) is an exciting, hands-on summer course for high school students interested in engineering. A residential experience is available at the JHU Homewood campus and Hood College.

Through Engineering Innovation, high school students put engineering concepts to the test. Applying their knowledge of math and science to labs and hands-on projects, concepts they’ve learned in their high school classrooms are suddenly linked to real-world practice. Students’ confidence grows as they attend college-level lectures, tackle problems, test theories, and ultimately learn to think like engineers.

**1st Deadline** - February 1, 2017. Complete applications received by 5:00PM on February 1st will be reviewed and decisions will go out by February 15th.

**Financial Aid Priority Deadline**: March 15, 2017

Visit website for additional deadlines. Applications will be accepted until sites are filled.

**Program Runs**: June 26 to July 21 for all MD locations

**MD/DC/PA locations**: JHU Homewood Campus; JHU - APL Campus; JHU - Montgomery County Campus; Hood College; Loyola University; UDC; Sci Tech High School - Harrisburg, PA

Contact: engineering-innovation@jhu.edu or visit Engineering Innovation for more information.

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**Professional Opportunities**

### BioEYES MS Teacher Training

Middle school teachers are invited to a PD session to learn about Project BioEYES, a week long, hands-on genetics program that uses live zebrafish. Training is mandatory for teachers new to BioEYES. The PD and in-school-time program are free to Baltimore City Public teachers. You will also receive a park-for-free voucher, a continental breakfast, and will be entered in a raffle to win a $25 gift certificate for Carolina Biologicals.

**Date**: February 11, 2017

**Location**: Carnegie Institution for Science
3520 San Martin Drive, Baltimore, MD 21218

**Time**: 9:00AM - 1:00PM

**RSVP**: Rob Vary at vary@ciwemb.edu or 410.246.3004

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**Featured Partnership**

### Army Educational Outreach Program

The Center for Educational Outreach and Hopkins Extreme Materials Institute at Johns Hopkins University have been awarded a strategic outreach initiative grant to help promote the Army Educational Outreach Program (AEOP). The mission of AEOP is to provide both students and teachers a collaborative, cohesive, portfolio of Army-sponsored STEM programs that effectively engage, inspire, and attract the next generation of STEM talent through K through college programs and expose them to Department of Defense STEM careers. Starting this month, this newsletter will include the AEOP’s student enrichment, competitions and apprenticeship opportunities in Maryland. We are hoping that students will take advantage of these exciting opportunities.
Greetings!

This edition covers local STEM events happening in February and March as well as upcoming programming deadlines for you to share with your students. As always, we've gathered information on professional development options and added a feature story section at the end.

Enjoy,

Center for Educational Outreach Team

Upcoming Programs and Events

Ready, Set, Design!

The Ready Set Design! program provides introductory engineering experiences for girls in the Baltimore area, through half-day weekend programs on the Johns Hopkins University campus. The girls will brainstorm, build, and present their prototype solutions to themed, real-world engineering problems in groups. JHU students act as mentors for the girls.

Please check our website for registration details and more information in February! Note this event is free, but participants must provide their own transportation.

Middle School Details
Date: Saturday, February 18, 2017
Location: JHU Levering Hall, Great Hall
Time: 10:00 AM - 1:00 PM

Elementary School Details
Date: Saturday, March 4, 2017
Location: JHU Levering Hall, Great Hall
Time: 10:00 AM - 1:00 PM

To register click HERE or email: Ready, Set, Design!

Maryland Science Olympiad: Baltimore Regional Tournament

Maryland Science Olympiad will be hosting the Baltimore City Regional Tournament. Middle school students from over 25 schools in Baltimore City will be competing for medals in events ranging from bottle rockets to towers and propeller planes! Volunteers are needed to help supervise events. Come check out the students’ projects and see what MSO is all
Date: Saturday, March 4, 2017  
Location: Morgan State University  
Registration begins: 8:00 AM

Contact Kate McGuire or click HERE for more information.

Summer Academy of Mathematics and Science (SAMS)

The Summer Academy of Mathematics and Science (SAMS) program is a rigorous academic enrichment program designed to foster excitement, among high school students, in the science, technology, engineering, and mathematics (STEM) disciplines. Students reside for five-weeks on the campus of Morgan State University and attend mathematics, English, and computer science classes. Weekly STEM themes are introduced via guest speakers, hands-on activities, and field trips.

Dates: June 25th - July 28th  
Location: Morgan State University

For more information visit: MSU SAMS for more information.

Engineering Innovation

A Summer Program for High School Students

Engineering Innovation (EI) is an exciting, hands-on summer course for high school students interested in engineering. A residential experience is available at the JHU Homewood campus and Hood College.

Through Engineering Innovation, high school students put engineering concepts to the test. Applying their knowledge of math and science to labs and hands-on projects, concepts they've learned in their high school classrooms are suddenly linked to real-world practice. Students' confidence grows as they attend college-level lectures, tackle problems, test theories, and ultimately learn to think like engineers.

2nd Deadline - February 15, 2017. Completed applications received by 5:00 PM on February 15th will be reviewed and decisions will go out by March 1st.

Financial Aid Priority Deadline: March 15, 2017

Visit website for additional deadlines. Applications will be accepted until sites are filled.

Program Runs: June 26 to July 21 for all MD locations

MD/DC/PA locations: JHU Homewood Campus; JHU - APL Campus; JHU - Montgomery County Campus; Hood College; Loyola University; UDC; Sci Tech High School - Harrisburg, PA

Contact: EI or visit Engineering Innovation for more information.

Professional Opportunities

Arduino for Educators Workshop

Do you want to teach computer programming but want an experience that involves more than just what is on a screen? With an Arduino device, you can teach the concepts of computer programming while building interactive and engaging projects that involve lights, buttons, motors,
sounds, and sensors. In this workshop, educators will learn how to teach key programming
concepts such as variables, control flow, and computational logic using Arduino devices and
other hardware components.

**Date:** March 24th and 25th, 2017

**Location:** Digital Harbor Foundation Tech Center
1045 Light Street, Baltimore, MD

**Time:** 5:00pm - 9:00pm on Friday and 10:00am - 5:00pm on Saturday
**Details:** Click Arduino for more info
**Contact:** Email Josh

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**Make Your Makerspace Web Series**

Make Your School a Makerspace is a new course that will help you build some of our favorite
(and most useful) maker tools! Learn how to build 10 different projects for use in your school,
library, or any other youth focused makerspace.

Join us once a month when we will broadcast a new project via a live online class. You can
follow along and collaborate with us and others from your own space.

**Date:** Third Thursday of every month.
**Location:** Online
**Details:** Click Maker Space for more info
**Contact:** Email Josh

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**Project Learning Tree**

Engage in hands-on, inter-disciplinary activities focusing on wildlife, the environment and
conservation. Activities are drawn from the popular Project WILD Curriculum and Activity Guide.
This workshop is appropriate for informal and formal educators of K-12 students. Participants
receive copies of both the Project WILD and WILD Aquatic Curriculum and Activity Guides. **Participants may be eligible to receive 1 MSDE Professional Development Credits.**

**Date:** Saturday, April 1, 2017
**Location:** Baltimore Aquarium
**Time:** 9:30 AM - 4:00 PM
**Cost:** $15 per person (includes Aquarium admission and refreshments. Lunch is not provided)
**Deadline to register:** March 24, 2017
**Call to register:** 410-576-3833 or visit the National Aquarium’s website for more info.

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**Featured Success Story**
I'm a WISE Woman! Women in Science and Engineering (WISE)

This past fall semester the Center hosted students from Western High School and Garrison Forest School to participate in our Women in Science and Engineering internship program. Click HERE to read a story that was published about the program.
Greetings!

The countdown to summer is on! With only 10 weeks left in the school year we're gearing up for more exciting spring events. Keep scrolling to find out about local STEM activities starting in April.

Enjoy,

Center for Educational Outreach Team

Upcoming Programs and Events

The Johns Hopkins Biomedical Engineering Society Science Olympics

Johns Hopkins Biomedical Engineering Society will be holding Science Olympics at the VLP! Students in the LINK (Let's Invest in Neighborhood Kids) After School program in 3rd-6th will be split into groups, and will be paired with student volunteers from Johns Hopkins. The teams will then compete in a series of engineering challenges, including an aluminum foil tower building contest and an egg drop!

Date: Friday, April 7, 2017
Location: Village Learning Place, 2521 St Paul St, Baltimore, MD 21218
Time: 2:25 PM - 5:30 PM

Contact Sanjay Elangovan for more information.

Maryland Science Olympiad State Tournament

The Maryland Science Olympiad State Tournament will be held on Johns Hopkins Homewood Campus this Saturday, April 8th. Middle and high school students from across Maryland will be competing in 25 different STEM event competitions. Come check it out or volunteer to be a part of the fun!

Date: Saturday, April 8, 2017
Location: Johns Hopkins Homewood Campus
Time: 8:00 AM - 7:00 PM

Contact Sara Shunkwiler for more information or visit MSO State Finals for event details.
Raspberry Pi Workshop

The Digital Harbor Foundation will be holding a two-day Raspberry Pi workshop. The course will be taught by a Raspberry Pi Certified Educator, and be an introduction to Raspberry Pi, programming in python, and "hacking" Minecraft. The total cost for the workshop is $450 and includes a Raspberry Pi starter kit and a subscription to the Digital Harbor Foundation's Blueprint online resource.

**Application Deadline:** Wednesday, April 12, 2017  
**Date:** Friday, April 21 - Saturday, April 22, 2017  
**Location:** Digital Harbor Foundation, 1045 Light St, Baltimore, MD 21230  
**Time:** 5:00 PM - 9:00 PM on Friday and 10:00 AM - 5:00 PM on Saturday  
**Cost:** $450 USD

To register, click [HERE](#) For more information, contact Jonathan.

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SABES STEM Showcase

Come see STEM Achievement in Baltimore Elementary Schools (SABES) students present their hands-on STEM projects. Explore STEM through interactive demonstrations. Learn more about STEM in the community.

**Date:** Wednesday, May 3, 2017  
**Location:** JHU Homewood Campus, Newton H. White, Jr. Athletic Center  
**Time:** 5:30 PM - 7:30 PM

Register [HERE](#). For more information contact Alisha Sparks.

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Summer Academy of Mathematics and Science (SAMS)

The Summer Academy of Mathematics and Science (SAMS) program is a rigorous academic enrichment program designed to foster excitement, among high school students, in the science, technology, engineering, and mathematics (STEM) disciplines. Students reside for five-weeks on the campus of Morgan State University and attend mathematics, English, and computer science classes. Weekly STEM themes are introduced via guest speakers, hands-on activities, and field trips.

**Dates:** June 25th - July 28th  
**Location:** Morgan State University

For more information visit: [MSU SAMS](#) for more information.

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Verizon Innovative Learning Program for Minority Males

This Verizon Innovative Learning Program for Minority Males offers male students in Baltimore City Public Middle Schools access to high-level technology (including coding, robotics and 3D design), STEM and entrepreneurship skills. Students participate in a full day of hands-on activities and interactive instruction coupled with mentoring on the campus of Morgan State University.

Please note that we are currently enrolling students until capacity is reached.

**Middle School Details**

**Date:** SESSION ONE: June 26 - July 7, 2017  
SESSION TWO: July 10 - July 21, 2017  
**Location:** Morgan State University  
**Time:** 9:00 AM - 4:00 PM

For more information, click [HERE](#) or email LaDawn Partlow.
**FutureMakers - Bring a makerspace to you this spring and summer!**

Pop-up a makerspace at your site this spring or summer! Enhance your in-or after-school program with visiting makers and innovative STEAM projects! FutureMakers coaches bring a classroom of real tools, creative technologies and pro-grade materials to young makers in PK - 8 classrooms and OST programs in greater Baltimore. From light painting and drawing machines to vacuum forming plastics and woodworking - we help your staff and students grow skill and confidence. Activate technical skills through play, reinforce positive social and emotional learning, and incorporate best STEAM practices into your program. Ask us about how our partners use our pop-up labs as learning experiences for participants and leadership!

**Date**: April 15 - August 30, 2017  
**Location**: Greater Baltimore  
**Time**: We fit your schedule - contact us for available day and evening visits.

Click [HERE](#) for more info or contact Matt.

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**The Johns Hopkins University Center for Biotechnology Education 12th Annual Research Symposium**

The Center for Biotechnology Education will host an information session as well as provide an evening of networking, poster presentations and speakers. The keynote speaker will be Sarah Anzick, Ph.D., a researcher for the National Institute of Allergy and Infectious Diseases.

**Date**: Thursday, May 4, 2017  
**Location**: The Johns Hopkins University Montgomery County Campus, A&R Building  
**Time**: 6:00 PM - 8:00 PM

Contact Rachael Romano [here](#) for more information.

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**Research Experience for STEM Educators and Teachers (RESET)**

Research Experiences for STEM Educators and Teachers (RESET) provides educators with summer research experience at participating Army Laboratories. The goal of this enriching program is to reinforce teachers' content knowledge through research experience and interactions with Army and Department of Defense scientists and engineers. Selected teachers will participate in on-line learning as a cohort, with a subset of the cohort selected to conduct research on-site with a mentor Army scientist or engineer. At the completion of the program, teachers will be able to translate this knowledge and experience into enhanced science, technology, engineering and math research curricula and enriched learning for their students.

**Application Deadline**: Friday, April 14, 2017  
**Dates**: June - August (dates vary by site location)

For more information, click [HERE](#) or email Shabir Bhegani.

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**POGIL Northeast Regional Workshop**

Process Oriented Guided Inquiry Learning (POGIL) is an instructional strategy that provides opportunities to teach both content and key process skills at the same time. POGIL classrooms and labs consist of any number of students working on specially designed materials in small, self-managed groups.

At this workshop you will:
* Enhance your professional development by gaining new insights into teaching and learning.
* Discover new facilitation techniques
* Experience writing and reviewing activities

Our regional workshop has sessions designed for those new to POGIL, as well as those with previous POGIL experience. We also have plenary and poster sessions for all participants.

**Application deadline:** Monday, May 1, 2017  
**Dates:** July 17-19, 2017  
**Location:** Johns Hopkins University

Note: The POGIL Project has leased or rented facilities from the Johns Hopkins University. However, The POGIL Project and any programs operated by The POGIL Project are not related to or affiliated with the Johns Hopkins University aside from the temporary use of facilities for the specified program.

To register, click [HERE](#) (you'll need to create an account).  
For more information, contact Julie Boldizar.

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### Featured Success Story

**Barclay Hopkins STEM Partnership**

Congratulations to Coach Lewis and Barclay's Maryland Science Olympiad team! Barclay students have advanced to the [MSO State Finals](#) after earning 4th place in the MSO Regional Tournament on Saturday, March 4th, at Morgan State University. The Barclay Team placed in the following categories:

- Write It Do It: 1st
- Fast Facts: 2nd
- Meteorology: 2nd
- Rocks and Minerals: 4th
- Wright Stuff: 4th
- Towers: 5th
- Disease Detectives: 5th
- Food Science: 6th

For more information about the partnership, click [HERE](#).
Greetings!

The last day of school is here, but that doesn't mean the learning has to end! Below are summer STEM opportunities for all grade levels and interests.

Enjoy,

Center for Educational Outreach Team

Upcoming Programs and Events

Maryland Tech Invitational
(Robotics competition)

The Maryland Tech Invitational features top FIRST Tech Challenge teams from across the nation for a high quality competitive tournament. 28 teams from 10 states earned spots through achievement in the FIRST Tech Challenge Velocity Vortex robot game during the 2016-2017 season. This event is free and open to the public.

Date: Saturday & Sunday, June 24-25, 2017
Location: Johns Hopkins Applied Physics Laboratory Kossiakoff Center, 11100 Johns Hopkins Rd, Laurel, MD 20723
Time: Saturday 1:00 PM - 6:00 PM and Sunday 8:00 AM - 4:00 PM

Contact Jenny Beatty or visit MTI for more information.

Barclay Summer STEM Academy

Barclay Elementary/Middle School, in partnership with Johns Hopkins University, Whiting School of Engineering, offers a STEM-focused school year extension program for rising 5th - 8th grade students. There is no charge for City Schools students to attend! Program highlights include:

Science Investigations
Engineering Design
Computer Programming and Coding
Media Arts and Marketing
Applied Math and Reading
Career Exploration
Student and Community Showcase
And much more!

Register today! Space is limited!
School is Out, STEM is IN!
SuGO Battle Bots

Are you ready to have a blast with SuGO at the USRA STEMaction Center?

What is SuGO? It combines the fun of LEGO Mindstorm NXT robots with Sumo wrestling. In this workshop youth work in teams to build SuGO Battle Bots using supplied LEGO Mindstorms NXT kits with special SuGO add-ons. After the bots are built it will be time to hit the competition ring for a thrilling and fun tournament. For more details click on SuGO.

This is for students ages 9 to 14.

Date: Saturday, August 5, 2017  
Location: USRA STEMaction Center, 7178 Columbia Gateway Drive, Columbia, MD 21046  
Time: 9:00 AM - 12:30 PM  
Cost: $45

For more information email Amber Driesman.

Bmore STEM Ecosystem

STEM is happening this summer throughout Baltimore. Whether it's urban farming, STEM/wrestling camp, or arts integration, community partners and after-school providers are gearing up to provide robust summer opportunities for youth of all ages.

BmoreSTEM has developed an interactive menu of summer STEM programs for youth and families. See the link below to explore great opportunities in your own backyard.

Dates/Locations/Times: Varies (see Bmore STEM Summer 2017 list)

For summer details visit Bmore STEM.

Featured Success Story

During this past school year, our Center orchestrated numerous STEM educational programs engaging more than 400 JHU students and faculty with over 1,200 K-12 students across Baltimore City. We are very proud of the work that we do and the positive experiences we create for local youth through STEM learning. We offer programming year-round and look forward to continually growing our offerings.
Greetings!

We are back in action for the 2017-2018 school year! Below are some exciting STEM events and professional development opportunities happening this fall. Also, check out our Partnership Success Story for news on the new science curriculum for City Schools.

Enjoy,

Center for Educational Outreach Team

Upcoming Programs and Events

1st Annual Girls in Computer Science Summit!

Code in the Schools aims to expose young women in grades 9-12 who have not traditionally had access to computer science education to a dynamic day of workshops, panels, and networking with leading industry professionals. We are asking for your help in directing young women you feel would benefit from this educational and networking opportunity! We hope that this event will catalyze their interest in computer science and serve as the first step in accessing further CS programming with CITS and other local organizations.

**Date:** Saturday, September 23, 2017  
**Location:** 10 E. North ave, Baltimore, MD 21202  
**Time:** 10:00 AM - 4:00 PM  
**Cost:** FREE  
**Deadline:** registration ends on 9/22/17

Call 410-982-0706 or click [HERE](#) to register online.

Scholarship Opportunity

High-achieving high school seniors are eligible for this scholarship. Recipients are awarded up to $40,000 per year to complete their bachelor's degree, in addition to opportunities for internships, study abroad, and graduate school funding.

The [application](#) for the College Scholarship Program is currently open. The deadline for all materials in November, 14, 2017.

For questions regarding the application, please email [JKCF](#) or call 1-800-941-3300.
Visiting Engineer for High School Classrooms

Invite an engineer to share his/her experiences with your high school students. Introduce them to the variety of exciting career opportunities available in the field of engineering and provide them with information about how to prepare in high school for an engineering career. Presentations can be modified to last 20 - 70 minutes.

Engineers are available September through March 2018 and cover Maryland, Northern Virginia, District of Columbia, and Harrisburg, PA area.

Contact Crystal Radford at 410-516-6224 or via email.

Professional Development Opportunities

Science Training for Educators

Project BioEYES is a fun, one-week, K-12 science outreach program that provides resources, in-class co-teaching with a science educator, and curriculum that uses live fish as subjects. This workshop will build your competence and comfort-level in teaching hands-on science using a student-centered approach.

Teachers in 2nd, 3rd, 4th, 5th, 7th and 10th in Baltimore City Public Schools will have preference. Space is limited!

Date: Saturday, September 23rd and October 7th, 2017
Location: Carnegie Institution for Science, 3520 San Martin Drive, Baltimore, MD 21218
Time: 9:00 AM - 1:00 PM
Cost: FREE to Baltimore City Public School teachers

Click HERE to register or contact Rob Vary for more information.

Advance 3D Printing for Educators Workshop

Are you interested in taking your 3D printing skills to the next level? Do you want to learn how to build a 3D printer?

The focus of this 2 day professional development workshop is to understand the mechanics of a 3D printer and dive deeper into G-Code. This workshop includes a 3D printer kit that you'll build during the workshop and take home once you complete it! Some previous 3D Printing experience is recommended.

Date: Friday & Saturday, October 6-7th, 2017
Location: Digital Harbor Foundation, 1045 Light St., Baltimore, MD 21230
Time: 5:00 PM - 9:00 PM
Cost: $1,500

For more information email Brooke or visit PRINTING.

Making for Educator Workshop

Are you interested in Making but don't know how to get started? Curious about Makerspaces? Want to know more about bringing immersive hands-on experiences to your learning program?

Our 2-day workshop teaches you how to get started making in your learning space and provides all you need to jump-start your own makerspace for youth - and includes a Makerspace Starter Kit!
This workshop is eligible for credit: 1 CPD Credit through the Maryland State Department of Education.

**Date:** Friday & Saturday, November 10-11th, 2017  
**Location:** Digital Harbor Foundation, 1045 Light St., Baltimore, MD 21230  
**Time:** 5:00 PM - 9:00 PM  
**Cost:** $685

For more information email [Brooke](mailto:Brooke) or visit [MAKING](http://www.making.org).

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**Partnership Success Story**

![Johns Hopkins Whiting School of Engineering](https://www.jhu.edu/)

**Baltimore City schools adopt science program built in cooperation with Johns Hopkins**

[Click here to read the JHU Hub article](http://www.jhu.edu/hub/article/baltimore-city-schools-adopt-science-program-built-cooperation-with-johns-hopkins)
Greetings!

This month’s STEM newsletter covers programs and opportunities happening now through December. If you missed last month’s Partnership Success Story, no worries; we’re sharing it again!

Enjoy,

Center for Educational Outreach Team

Upcoming Programs and Events

Baltimore BrainFest

The Baltimore BrainFest is a yearly event for people of all ages to learn more about that mysterious, squishy, pink organ housed in your cranium. Enjoy brain-related activities, games, exhibitions, arts and crafts, speakers and more! Come find out what makes you, you.

**Date:** Saturday, October 14, 2017  
**Location:** Liberty Elementary School, 3901 Maine Ave, Baltimore, MD 21207  
**Time:** 10:00 AM - 4:00 PM

Email Cooper with questions about this event or click on their [website](http://example.com) for more info.

Ready, Set, Design!

Introduction to engineering event for elementary-aged girls. Students work in groups to solve a design problem and are mentored by JHU engineering students.

**Date:** Saturday, October 28, 2017  
**Location:** Johns Hopkins University, Glass Pavilion in Levering Hall  
**Time:** 10:00 AM - 1:00 PM  
**Registration Deadline:** October 25, 2017

Visit their [Facebook](https://www.facebook.com) page or send an [email](mailto:info@example.com) for more information.

Code in the Schools Game Jam

In this free one day event, aspiring video game developers in 6th through 12th grade come together in teams to rapidly create a game based on a
AEOP Opportunities

The Army Educational Outreach Program (AEOP) continues its long tradition and strong commitment to the advancement of STEM education and literacy. Leveraging its most valuable assets - world-class scientists and engineers and research facilities - AEOP offers our nation's youth and teachers a collaborative, cohesive portfolio of opportunities that effectively engage future workforce generations in meaningful, real-world STEM experiences, competitions and paid internships. The application period for the 2017-18 opportunities will be opening up soon.

Come check out AEOP!

Visiting Engineer for High School Classrooms

Invite an engineer to share his/her experiences with your high school students. Introduce them to the variety of exciting career opportunities available in the field of engineering and provide them with information about how to prepare in high school for an engineering career. Presentations can be modified to last 20 - 70 minutes.

Engineers are available September through March 2018 and cover Maryland, Northern Virginia, District of Columbia, and Harrisburg, PA area.

Contact Crystal Radford at 410-516-6224 or via email.

Professional Development Opportunities

Become a SABES Mentor

SABES (STEM Achievement in Baltimore Elementary Schools) is looking for Mentors to work in our afterschool program. Mentors will assist in the classroom as students complete engaging STEM projects. Our afterschool program provides students with opportunities to grow their knowledge and curiosity, and lead inquiry-based projects related to their community's needs.

Date: Starting now!
Location: Various Baltimore City Elementary Schools
Time: 2hr/every other week or 2hr/month. Programs run between 2:30 PM - 6:00 PM.

Click HERE to sign up or email William Lyoo for more information.

Maryland Science Olympiad Coaches Clinic

Start a STEM afterschool team for exciting tournaments! Join the over 100 middle and high school teams in Maryland Science Olympiad. Coaches Clinic PD is at Vanguard Collegiate Middle School and includes information for new coaches and new event components.

Register by contacting Charlotte or click HERE for details.
Making for Educator Workshop

What is a Makerspace? Why is making important to youth? Where do I start?

In DHF’s 2 day workshop, we introduce the ideas and concepts to educators on how they can create an immersive, hands-on learning environment through making. We discuss the maker's mindset, project ideas and templates, and tips on how to build your own makerspace. You will leave with your own kit of supplies in the Makerspace Starter Kit.

This workshop is eligible for credit: 1 CPD Credit through the Maryland State Department of Education.

3D Printing for Educators Workshop

Digital Harbor Foundation’s 3D Printing Workshop for Educator Workshop walks through how educators can begin teaching 3D printing in their learning environments. In the 3 day course, we will cover 3D Printing hardware, software, and how DHF teaches 3D printing, and it includes a 3D printer and starter kit.

Baltimore City schools adopt science program built in cooperation with Johns Hopkins

Click here to read the JHU Hub article
December 2017 STEM Newsletter

Seasons Greetings!

December starts the application season for many great STEM programs. Students are encouraged to apply now to secure their summer enrichment plans early. Take advantage of educator programs currently open for enrollment in the Professional Development Opportunities section and keep scrolling to the Get Involved section for STEM mentor and volunteer openings.

Enjoy,

Center for Educational Outreach Team

Upcoming Programs and Events

Fall SABES STEM Showcase & Family Science Night

Village Learning Place is hosting its SABES STEM Showcase. This event will feature STEM projects from local elementary school students as well as hands-on experiments and demonstrations for the whole family. Activities presented by Maryland Science Center, FutureMakers, and many more! Dinner will be served.

Date: Wednesday, November 29, 2017
Time: 5:30 PM - 7:30 PM
Location: St. John's Church, 2640 St. Paul Street, Baltimore, MD 21218

JHU Engineering Innovation

Engineering Innovation is an exciting, college-level, summer program for motivated high school students with an aptitude in math and science and an interest in (or curiosity about) engineering. This program has been available to high school students since 2006. In the program, students learn to think and problem-solve like engineers and have the opportunity to earn Johns Hopkins University (JHU) credit.

Application Opens: Friday, December 15, 2017. Students whose applications are complete (including teacher recommendation and official transcript) by February 15th will be notified by March 1st and then on a rolling two week basis thereafter.
Locations: MD, CA, PA, DC, OH
Program Dates: June 25 - July 21, 2018 (at most locations)

Click APPLY on 12/15 to start the process. Visit the EI website for more details.
JHU Engineering Innovation - Summer Jobs Program

Engineering Innovation - Johns Hopkins Summer Jobs Program Partnership (JHSJP) allows Baltimore City Public School students who reside in Baltimore City to complete the Engineering Innovation Summer Program as part of their JHSJP experience. Students who are selected for this limited space opportunity will spend four weeks enrolled in Engineering Innovation and four weeks working in the JHU Whiting School of Engineering.

**Application Opens:** Friday, December 15, 2017  
**Deadline to Apply:** Thursday, February 15, 2018  
**Location:** Baltimore, MD  
**Program Dates:** June 18 - August 10, 2018

Click [APPLY](#) on 12/15 to start the process. Visit the [EI JHSJP](#) website for more details.

The Ingenuity Project

Ingenuity provides an accelerated math, science, and research program to Baltimore City's gifted and advanced middle and high school students. Students apply in 5th or 8th grades and if accepted, are placed in one of three middle schools for the three year program, or four years for the high school program. Learn more at [Ingenuity Project](#).

**Deadline to Apply:** Wednesday, December 20, 2017  
**Multiple School Locations:** Hamilton Elem/Mid, Mount Royal Elem/Mid, Roland Park Elem/Mid, and Baltimore Polytechnic Institute

Click [HERE](#) to apply.

Research and Engineering Apprenticeship Program (REAP)

The Hopkins Extreme Materials Institute at Johns Hopkins University hosts the Research and Engineering Apprenticeship Program (REAP) created by the US Army Educational Outreach Program (AEOP). REAP is a summer Science, Technology, Engineering and Math (STEM) program that places talented high-school students from groups historically under-represented and underserved in research apprenticeships at U.S. colleges and universities. REAP apprentices work on a hands-on research project under the direct supervision of a mentor, exposing them to the real world of research and allowing them to learn about education and career opportunities in STEM.

**Deadline to Apply:** February 28, 2018

Click [APPLY](#) to begin the application process or visit the [HEMI](#) website for more information.

Tower of Power in Your Classroom!

Join Johns Hopkins University's Whiting School of Engineering in celebrating National Engineers Week (February 18-24, 2018) by building a tower from spaghetti and marshmallows. The tallest freestanding tower wins!

The top five winning middle school teams will be invited to JHU's Tower of Power competition on February 20, 2018 to build their tower again and compete with undergraduate students, alumni, and faculty teams.

Email [STEM Outreach](#) to submit your intent to participate by [January 19, 2018](#)!
Entries are due **February 9, 2018**.

Click [HERE](#) for complete details.

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**Visiting Engineer for High School Classrooms**

Invite an engineer to share his/her experiences with your high school students. Introduce them to the variety of exciting career opportunities available in the field of engineering and provide them with information about how to prepare in high school for an engineering career. Presentations can be modified to last 20 - 70 minutes.

Engineers are available September through March 2018 and cover Maryland, Northern Virginia, District of Columbia, and Harrisburg, PA area.

Contact Suzanne Kantt at 410-516-6224 or via [email](mailto:).  

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**Professional Development Opportunities**

**Makey Makey Workshop for Educators**

Have you heard about the Makey Makey but don't know how to get started? Curious about how to introduce concepts of circuitry and invention to youth? Want to know more about bringing immersive hands-on projects to your learning program?

Our 1-day Makey Makey for Educators workshop teaches you how to start using the Makey Makey with your youth and includes a Makey Makey Starter Kit!

**Date:** Saturday, December 2, 2017  
**Location:** Digital Harbor Foundation, 1045 Light St., Baltimore, MD 21230  
**Time:** 10:00 AM - 5:00 PM

Click the [MAKEY](#) website to register or email [Brooke](mailto:).

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**3D Printing for Educators Workshop**

Digital Harbor Foundation's 3D Printing Workshop for Educator Workshop walks through how educators can begin teaching 3D printing in their learning environments. In the 3 day course, we will cover 3D Printing hardware, software, and how DHF teaches 3D printing, and it includes a 3D printer and starter kit.
Research Experiences for STEM Educators and Teachers (RESET)

RESET reinforces teachers’ content knowledge through research experiences and interactions with Army and Department of Defense scientists and engineers. Selected teachers will participate in online learning as a cohort, with a subset of the cohort selected to conduct research on-site with a mentor Army scientist or engineer. Teachers will be able to translate this knowledge and experience into enhanced science, technology, engineering and math research curricula and enriched learning for their students.

**Dates**: April - August 2018  
**Deadline to Apply**: February 15, 2018  
**Location**: Online and on-site at participating Army laboratories  
**Commitment**: 60 hours of PD time for Level I, 220 hours for Level II

Click [RESET](#) to apply and learn more about the program.

Get Involved!

**Become a SABES Mentor**

SABES (STEM Achievement in Baltimore Elementary Schools) is looking for Mentors to work in our afterschool program. Mentors will assist in the classroom as students complete engaging STEM projects. Our afterschool program provides students with opportunities to grow their knowledge and curiosity, and lead inquiry-based projects related to their community’s needs.

**Dates**: Starting now  
**Current Locations**: Robert W. Coleman Elem School and Pimilco Elem School at Garrison Middle School  
**Time**: 2hr/every other week or 2hr/month. Programs run between 2:30 PM - 6:00 PM.

Click [HERE](#) to sign up or email William Lyoo for more information.

**Hopkins Robotics Cup - Volunteers Needed**

Volunteers are needed for the 6th annual Hopkins Robotics Cup. There will be two divisions, one for the VEX IQ Challenge (elem/mid school students) and the second for the VEX Robotics Competition (mid/high school students). This year’s VEX IQ Challenge is *Ringmaster* and the VEX Robotics Competition is *In The Zone*. Please fill out the [Volunteer Form](#) to participate. No experience necessary! Training will be provided. Come volunteer and support STEM in Baltimore City!

**Set-Up Day**: Friday, January 27, 2018  
**Competition Day**: Saturday, January 28, 2018  
**Location**: Newton White Athletic Center at Johns Hopkins University Homewood Campus  
**Commitment**: Choose either set-up day or competition day or both!

Contact [Margaret Strong](#) with questions.