

# Center for Educational Outreach Newsletter

Issue: #1

Fall, 2012

Center for Educational Outreach  
JOHNS HOPKINS UNIVERSITY

WHITING SCHOOL  
OF ENGINEERING



Dear Margaret,

Welcome to the new CEO Newsletter! We are excited to share all the great events and opportunities available around the greater Baltimore City area. This newsletter is written for STEM teachers and Out of School Time professionals working with K-12 students. Our hope is to provide information for both you and your students.

Please make sure to answer our survey so we can make this newsletter even better.

## Survey

### What do you want to read?

Please take a moment to fill out our survey about what you would like to see in the CEO newsletter.

[Link to the Survey](#)



### Who We Are

The Center for Educational Outreach is part of the Whiting School of Engineering at Johns Hopkins University. Our mission is to inspire and prepare youth, particularly those underrepresented in STEM, to pursue STEM education and careers.

## News



### Robots Everywhere

On Wednesday, August 1st over 200 middle school students from Baltimore City Public Schools competed at the Robotics Olympiad. The Olympiad was the conclusion to the Summer Jump "Create the Solution" Robotics Program, a five-week summer course where students strengthened their math and science skills while designing and creating VEX Robots.

[Learn More...](#)



### InnoWorks 2012

During the week of August 6th, InnoWorks hosted their second annual summer camp for Baltimore youth. The theme for this year's camp focused on the human senses and interpretation and investigating how the body understands and processes the world around it. Activities ranged from creative experiments like *Egg Drop Challenge*, where students created compartments to safely house their eggs during a 20ft. drop to quantitative experiments like *The Speed of Sound*,

where students calculated how fast sound travels using just a stopwatch, an air horn, and teamwork. During "Microscope Fun" students used microscopes to visualize cells from their very own cheeks! Everyone had a great time, and we're looking forward to next year's program!



### Engineering Innovation 2012

We had another successful year of Engineering Innovation! A total of 270 students participated at 11 sites across the country (5 in Maryland, 1 in Pennsylvania, 1 in the District of Columbia, and 3 sites in California).

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Students learned about electrical engineering, chemical engineering, materials science, mechanical engineering, and robotics by participating in both classroom and laboratory activities. They designed a robotic car, tested material properties of spaghetti, constructed a mousetrap, tested heat transfer efficiencies, and designed and constructed bridges made of spaghetti. More than 85 spaghetti bridges were tested. The best bridge that met all the design criteria held 48 kg, about 190 times its weight of 250 grams!

[Learn more about Engineering Innovation](#)

## Events and Opportunities for Students

### Dive into BioEYES

Project BioEYES is getting ready for the 2012-2013 school year! In this weeklong science program provided by the Carnegie Institution and the Johns Hopkins School of Education, students deal with a live model organism: the zebrafish. These small tropical fish produce embryos in the classroom that students will raise for the rest of the week. By Friday, they hatch out as free-swimming larvae with bodies clear enough that students can observe their heart beating and their blood flowing using the stereomicroscopes we provide. The program is designed for grades 2, 5, 7, and high school and is available only to Baltimore City Public School teachers. All participating teachers must attend one of our training sessions. For more information on the program, please visit [www.bioeyes.org](http://www.bioeyes.org). If you have questions or would like to sign up for one of our training sessions, please email Rob Vary at [vary@ciwemb.edu](mailto:vary@ciwemb.edu). Spots in the training sessions are scheduled on a first-come, first-served basis, so register early!



[Learn More...](#)

### Ready, Set, Design!

The Ready Set Design! program provides introductory engineering experiences for middle school girls in the Baltimore area, through half-day weekend programs at the Johns Hopkins University campus.



There are 2 sessions this fall, September 22nd and November 3rd. Find out more about times and locations [here](#).

### Nominate Students for Membership to Cogito.org

**cogito.org**

Cogito.org, an award-winning site for middle and high school students with a passion for math and science, provides a virtual place for gifted young scientists to geek out with each other and with working scientists and mathematicians. If you would like to nominate talented students ages 13-18 for membership to Cogito (membership is free), please email editor Kristi Birch at [kbirch@jhu.edu](mailto:kbirch@jhu.edu). Check out the site at [www.cogito.org](http://www.cogito.org).

## Opportunities for Teachers



Graduate Education

### Certificate in Biotechnology Education

The Johns Hopkins University invites you to apply to the Certificate in

### SAVE THE DATE

On **May 4th, 2013** the Center for Educational Outreach is hosting the **Hopkins Robotics Cup**, the first Baltimore City Public Schools VEX Robotics Championship. All Baltimore City Middle and High Schools with VEX Robotics teams are invited to participate in this exciting event. More information will be provided as the season progresses, but mark your calendars now!

Interested in volunteering? Contact Margaret Strong at [mstrong@jhmi.edu](mailto:mstrong@jhmi.edu).

Biotechnology Education, a joint offering of the School of Education and the Advanced Academic Programs of the Zanvyl Krieger School of Arts and Sciences. This 20-credit graduate certificate is designed to allow grade 6-12 school science teachers, as well as curriculum and instructional leaders, to strengthen their content knowledge and pedagogic techniques in bioscience and develop ways to teach bioscience effectively in the classroom. The courses emphasize inquiry-oriented approaches and integrating technology in bioscience education. Moreover, teachers analyze recent research on bioscience education, reflect on their learning and practice, and develop teaching tools and assessment strategies to engage students in bioscience-related problems and inquiries.

To read an article about how a current CBE student revived a biotechnology course in a local high school, please go to:<http://biotechnology.jhu.edu/calendar?ItemsID=49>

[Learn More...](#)

### **Tuition Free Educational Opportunities for Maryland STEM Teachers at Johns Hopkins Engineering for Professionals**

The increased emphasis on quality Science, Technology, Engineering, and Mathematics (STEM) education can only be met with available and affordable professional development for STEM teachers. To help Maryland become a leader in STEM education, Johns Hopkins Engineering for Professionals offers Maryland high school STEM teachers the opportunity to enroll in one course per semester (with a tuition waiver) in any of EP's 15 graduate programs. If you have specific questions regarding the eligibility or application process, please call 410.516.2300 or 1.800.JHU.ENGR or send e-mail to Ms. Priyanka Dwivedi, Director of Admissions, [pdwived1@jhu.edu](mailto:pdwived1@jhu.edu).

[Learn more...](#)

Look for more information about the Hopkins Robotics Cup and other exciting STEM opportunities in our next newsletter.

Sincerely,

Margaret Hart  
Center for Educational Outreach

[Forward this email](#)



Try it FREE today.

This email was sent to [margaret.hart@jhu.edu](mailto:margaret.hart@jhu.edu) by [margaret.hart@jhu.edu](mailto:margaret.hart@jhu.edu) | [Update Profile/Email Address](#) | Instant removal with [SafeUnsubscribe™](#) | [Privacy Policy](#).

Center for Educational Outreach | 103 Shaffer Hall | 3400 N. Charles St | Baltimore | MD | 21218

# Center for Educational Outreach Newsletter

Issue: #2

Fall, 2012

Center for Educational Outreach  
JOHNS HOPKINS UNIVERSITY

WHITING SCHOOL  
OF ENGINEERING



## Greetings!

Happy Fall!

Welcome Issue #2 of the new CEO Newsletter. We hope you had a great start to the school year. We've got great resources, ideas, events and opportunities for both you and your students in this newsletter.

Please take the survey below so we can bring you the best newsletter possible.

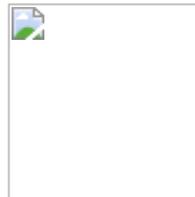
Take care,  
The Center for Educational Outreach

## Survey

### What do you want to read?

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[Link to the Survey](#)



## Ideas and Resources for STEM Activities



### Design Squad to the Rescue!

Need an engaging hands-on activity for students of all ages? PBS's [Design Squad](#) has you covered! They have a website **full** of great activities, complete with leader notes and student handouts.

Want engaging videos about real life engineers doing cool stuff? Check out Design Squad's [Heroes](#), a series of short videos. Check out this one about

## Ask the Professor

### ASK THE PROFESSOR



**Question:** Mrs. Jessie Caraballo at William Paca Elementary school asks: If the Earth and the moon move around or orbit around the sun, how come we see the same side of the moon?

**Answer:**

## Who We Are

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## SAVE THE DATE

On May 4th,  
2013 the Center for Educational

Earth rotates on its axis once a day, and orbits the Sun once a year. The Moon also rotates on its axis while orbiting Earth. However, the time it takes for the Moon to make one full rotation on its axis happens to be the same as the time it takes for the Moon to orbit the Earth, which is about one month (27.3 days). Hence, the Moon's rotational motion matches its orbital motion and the same side of the Moon always facing Earth. Here is a pretty good animated explanation: "[Synchronous Rotation of the Moon](#)"

This situation is called "tidal lock". The tidal forces of Earth's gravity slowed the Moon's spin until its rotation period matched its orbital period. Many of the moons in the solar system are tidally locked to their planets.

**Dr. Frank Summers**  
Astronomer, Space Telescope Science Institute

Do you have questions for a professor?  
Email [asktheprofessor@jhmi.edu](mailto:asktheprofessor@jhmi.edu) to get the answer in next month's newsletter!

## Events and Opportunities for Students



### Ready, Set, Design!

Ready, Set, Design! is a program for girls in grades 6-8 to learn what it's like to be an engineer through hands-on design projects. Sessions can range from 20-100 students, but all participants are mentored by current JHU female engineering students in specialized groups of no more than six!

This Fall, the theme is Urban Planning, where they will work with real-life issues and design constraints. At the end of the session, girls have the opportunity to present their process and models to the entire group. Creativity is encouraged, and there are no wrong ideas!

The next Ready, Set, Design! event will be held on **Saturday November 3rd** from 10am-1pm. Make sure to register in advance!

For more info, check out the [website](#).



### Learn about the latest Hubble discoveries!

Come hear about the Hubble Space Telescope's latest discoveries and other breakthroughs from across the universe in the Public Lectures Series at the Space Telescope Science Institute (STScI).

STScI is the scientific home of Hubble, and these free lectures by research staff and guests are held the **first Tuesday of each month at 8 PM** in the STScI auditorium, with free parking across the street. For more information and directions, visit [the website](#).

## WOW! That's Engineering!

SWE-BWS will host a SWE **Wow! That's Engineering!** event on Saturday, December 1, 2012. Wow! events for girls bring students and engineers together to learn about, and do engineering.

Outreach is hosting the **Hopkins Robotics Cup**, the first Baltimore City Public Schools VEX Robotics Championship. All Baltimore City Middle and High Schools with VEX Robotics teams are invited to participate in this exciting event. More information will be provided as the season progresses, but mark your calendars now!

Interested in volunteering?  
Contact Margaret Strong at [mstrong@jhmi.edu](mailto:mstrong@jhmi.edu).

The event is open to girls in grades 6-8.

SWE-BWS also will be hosting a Parent and Educator Program (PEP) at the event.



Volunteers are needed for both the student and PEP activities. Training for these activities will be provided, and all full-day volunteers will receive lunch and a t-shirt! More information about the event can be found here, and please e-mail [wow@swe-bws.org](mailto:wow@swe-bws.org) to get involved.

Several leadership roles also are open for this event. For more information, please e-mail Adrienne at [wow@swe-bws.org](mailto:wow@swe-bws.org) by October 17, 2012.

**What: Wow! That's Engineering! Outreach Event**

**When: Saturday, December 1, 2012, 8:30am to 4:30pm**

**Where: Southern Maryland Higher Education Center, 44219 Airport Road, California, MD 20619**

**RSVP: Please e-mail [wow@swe-bws.org](mailto:wow@swe-bws.org) to volunteer**

## Professional Development Opportunities for Teachers



### Certificate in Biotechnology Education

Attend an online information session for Johns Hopkins University's 20 credit graduate [Certificate in Biotechnology Education](#) on **October 24th, 2012, 7pm EST.**

This Certificate for 6-12th grade science teachers is jointly offered by the School of Education and the Center for Biotechnology in the Krieger School of Arts and Sciences. This 20-credit graduate Certificate in Biotechnology Education provides a strong foundation in bioscience education and its applications in research laboratories and the biotechnology industry. It leverages our expertise in bioscience and teacher preparation to strengthen the content knowledge and pedagogic

techniques of teachers looking to effectively teach bioscience in their classroom.

Study online or in Baltimore or Rockville. Learn about the admissions requirements, course structure and participate in an online Q&A with faculty.

RSVP [Open House](#) and visit us at [biotechnology.jhu.edu](http://biotechnology.jhu.edu).

## MS in Biotechnology Education

Attend an online information session for Johns Hopkins University's [MS in Biotechnology](#) Program on **October 15th, 2012, 7PM EST**.

Biotechnology continues to expand rapidly with new discoveries and often life-saving products at a breathtaking pace. This industry, a merger of science and business, demands a multi-disciplinary workforce skilled in basic-research, product development, regulatory affairs and commercialization.

Students in the Master of Science in Biotechnology Program learn to advance their careers by broadening their skill base and understanding of this dynamic field.

Find out how you can earn your degree entirely online or study on ground in Baltimore or Rockville. Learn about the program's admission requirements, curriculum design, course structure, degree requirements, and how online education works in an online Q&A with faculty.

RSVP [Open House](#) and visit us at [biotechnology.jhu.edu](http://biotechnology.jhu.edu)

I hope the newsletter has been helpful. Again, please fill out our survey to share your thoughts about what we should put in the next one!

**Sincerely,**

Margaret Hart  
Center for Educational Outreach



# Center for Educational Outreach Newsletter

Issue: # 3

November 2012

Center for Educational Outreach  
JOHNS HOPKINS UNIVERSITY

WHITING SCHOOL  
OF  
ENGINEERING



## Greetings!

Our third issue is filled with lots of information for your students: upcoming contests, training sessions, and deadlines for summer STEM program applications, as well as professional development opportunities for you.

Enjoy!

The Center for Educational Outreach

## Opportunities and Events for Students

### Who's Got Game?

Do you know students who want to show off their game design skills? If so, tell them about the **STEM Fuse 2012-13 Winter**

**GOT GAME?** competition, a game design competition for middle-school and high-school students. Lots of information and rules can be found on the STEM Fuse [website](#). The deadline for submission is 11:59 PM on **January 11th, 2013**.



## Engineering Innovation

A Summer Program for High School Students

### Earn JHU College Credit!

The Johns Hopkins Engineering Innovation Summer Program will be held July 1 - July 26, 2013 at five local sites (Baltimore, Elkridge, Rockville, DC & Frederick) as well as locations in PA & CA. During this four-week introductory engineering course, students will complete hands-on activities in chemical, electrical, mechanical and civil engineering, material science and robotics. Students who earn an A or B in the course earn three JHU college credits. The online application will be available **February 1, 2013**. Visit the [website](#) for more information.

### US Naval Academy Summer STEM Program

The 2013 US Naval Academy Summer STEM Program is open to current 7th - 10th graders. The application will be available online January 3, 2013! Check the [USNA website](#) for more details.



### E-Week: Tower of Power

Join Johns Hopkins University's Whiting School of Engineering in celebrating National Engineers Week (February 17 - 23, 2013) by building a tower from spaghetti and marshmallows. The middle-school team that builds the tallest freestanding tower wins and will be invited to recreate their winning tower at the JHU Tower of Power event **February 18, 2013!** Check out the [website](#) for all the details.



### Who We Are

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**SAVE THE DATE**

On **May 4th, 2013**  
the Center for



### NACLO at Johns Hopkins

The Johns Hopkins Center for Language and Speech

Processing invites any **high-school** or **middle-school students** interested in language, psychology, math or computer science to come to our campus for Puzzles, Pizza, and Prizes and to take part in the North American Computational Linguistics Olympiad (NACLO) on **January 31st, 2013**. Computational linguistics is the science of understanding human language using logic, computer algorithms, and math. It is all around us! You use computational linguistics whenever you search with Google or Yahoo, socialize with your friends on Facebook, tweet on Twitter, or spell-check with Microsoft Office. To learn more about the practice sessions, school visits, and competitions, check out the [flyer](#) or the [website](#).



Educational Outreach is hosting the **Hopkins Robotics Cup**, the first Baltimore City Public Schools VEX Robotics Championship.

All Baltimore City Middle and High Schools with VEX Robotics teams are invited to participate in this exciting event. More information will be provided as the season progresses, but mark your calendars now!

Interested in volunteering? Contact Margaret Strong at [mstrong@jhmi.edu](mailto:mstrong@jhmi.edu).

## Community Events



### STEMpowerment Workshop for Parents

The Johns Hopkins Applied Physics Lab is hosting a parent STEM workshop on December 9th from 2-5pm. This is a great opportunity for any parents who may not know a lot about STEM, or who have specific questions about how to support their child's STEM education. The panel discussions will be presented in both English and Spanish. APL is providing complimentary shuttle buses to and from the workshop from three locations in the Baltimore/Washington area. Download the flyer for more information (in [English](#)) (in [Spanish](#)).

### Quick Links

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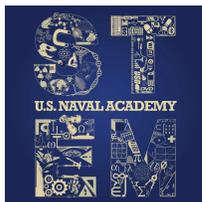
### Robo-Challenge Training Session

Robo-Challenge is a free competition that encourages middle and high school students to construct and program robots to compete in five competitions: *petite slalom*, *mystery maze*, *search and destroy*, *robot dance*, and *innovative use*. A training session will be held **January 26th, 2013** from **9am to 1pm** for students, teachers, and parents. Basic knowledge about how to build and program a robot will be covered. Teams can bring their robots and work together with Hopkins robotics graduate students. For more information and registration, please visit the [website](#).

## Professional Development Opportunities for Teachers

### SET Sail Summer Teacher Training

The USNA will host two STEM workshops that provide relevant and meaningful informal learning experiences for middle-school and high-



school teachers. The workshops will allow teachers the opportunity to discover, explore, and test ideas and, most importantly, learn how science and technology impact real-world research and challenges. Click for more [information](#). [Applications](#) are currently being accepted.

As always, we hope you find this newsletter useful. Enjoy the holidays and have a safe New Years. We'll see you in January!

**Sincerely,**

Margaret Hart  
Center for Educational Outreach

