



**Science Pioneers
Expanding Your Horizons 2016
Registration Form**



Who: Girls in grades 6th-8th
When: January 22, 2016
 6:30 pm – 10:00 pm
Registration open at 6:00 pm
Where: Science City at Union Station
 30 W. Pershing
 Kansas City, MO 64108
Cost: \$5.00 per girl

Please return registration form to:

Science Pioneers
 30 W. Pershing, Ste. 410
 Kansas City, MO 64108

Questions: Contact Science Pioneers at 816.460.2261 or email admin@sciencepioneers.org

Make checks payable to Science Pioneers and return with registration form by January 8, 2016

Registration is limited to the first 425 girls to enroll.

In case of inclement weather, please check our website, sciencepioneers.org for any notice of cancellation and the new alternate date.

Girl's Name: _____

Emergency Contact: _____

Home Address: _____

City, State, & Zip: _____

Daytime Phone: (_____) _____

Evening Phone: (_____) _____

Parent E-Mail: _____

Emergency Phone#: (_____) _____

School: _____

District: _____

Science Teacher: _____

Grade Level: 6th grade 7th grade 8th grade

Please select workshops from the following page and list by number.

Ethnicity: Caucasian Asian African American
 Hispanic American Indian or Pacific Islander
 Multi-racial

a) _____ b) _____ c) _____ d) _____
We will place you in at least one of your selected workshops.

_____ Please check if your daughter need specific services/accommodations to fully participate in this event. A member of our staff will contact you.

2016 EYH Keynote Speaker is Dr. Emily Arnold an assistant professor in the Aerospace Engineering Dept at the University of Kansas (KU), and the first female faculty member in the department's 75 year history. She received her B.S. in Aerospace Engineering in 2009 and PhD in Aerospace Engineering in 2013, both from KU. After receiving her PhD, she joined the MITRE Corp. and worked on the Air Force's BACN (Battlefield Airborne Communication Node) E-11A program before returning to KU. As a PhD student, she played an major role at the Center for Remote Sensing of Ice Sheets (CReSIS) in developing NASA's DC-8 and P-3 polar flying laboratories. Back at KU, she is continuing her collaboration with CReSIS developing the next generation of polar remote sensing platforms and sensors.

EYH T-shirts for sale – just \$15.00! Size: _____ (XS, S, M, L, XL) _____ Yes, the money is enclosed for the T-shirt!
(Money needs to be enclosed to secure a shirt the night of the event)

Science Pioneers routinely takes photos of its events for future program promotion in written publications or on the Internet. Please indicate if we DO NOT have permission for your child's photo to be used by Science Pioneers in conjunction with its charitable and educational purposes. **YES NO**

 Parent/Guardian Signature

 Parent/Guardian Print Name

This is an event for 6th-8th grade girls ONLY. Younger siblings may NOT attend. Chaperons and Parents are welcome to stay and assist. Otherwise parents may pick up their daughters up at 10pm outside the Extreme Screen!

2016 Expanding Your Horizons Workshops:

1. **Strength versus Cost - Building a Bridge.** Build a simple bridge structure and learn how to calculate the ratio of construction materials' cost to bridge weight capacity. This is what engineers deal with in real world projects.
2. **Genetics and Family History: What can DNA tell us about gene expression, traits and inheritance?** Explore the power of family history information. Construct pedigrees, follow the inheritance of several different types of traits, diseases and try to make predictions based on their evidence.
3. **Mussel Power!** Learn about the importance of freshwater mussels - from amazing facts, reproduction and ecology to stories about their relationship with humans. Then choose a mussel shell to take home.
4. **Force & Motion: Balloon Airplanes.** Explore the physics of force and motion while competing to create the best design for a balloon powered airplane to race!
5. **Spanning the Gap.** Come explore how to cross rivers and highways from civil engineers who design and build the future.
6. **Electric Play-Dough Circuits.** Learn about the flow of electricity by creating a simple circuit using conductive and insulating play-dough to light an LED.
7. **Do Elephants Play Video Games?** What do zoo animals do in their free time? Come learn about an important and fun part of being a zookeeper!
8. **Candy Crush Mitosis.** Demonstrate the four stages of mitosis using your favorite candy. Then perform a squash mount procedure to bring your designs to life!
9. **Top Secret Voting.** Build an electronic voting machine that keeps your votes secret. Learn binary/digital logic and how to design circuits.
10. **DIY DNA Extraction.** Learn the basis of DNA extraction and the steps involved to do it!
11. **Stressed Out!** Learn how tension and compression forces act on different bridge types and create models to see the forces in action.
12. **Astronomy, Carl Sagan & Apple Pie.** Learn what the famous astronomer, Carl Sagan, meant when he said, "To make an Apple Pie from scratch, you must first invent the universe."
13. **Missouri Wildlife Encounter.** Come experience native Missouri Wildlife hands on!
14. **Science of Popcorn.** Experiment with corn and discover the science behind the mini explosions. Use the scientific method to compare, contrast and hypothesize why the kernels pop.
15. **Robot Adventures.** Using the LEGO WeDo, be challenged to problem solve while building and programming a robotic animal to follow commands.
16. **Circuits.** Gain the knowledge and practical understanding of electricity, the functionality and uses through building and testing simple electrical circuits, switchers, sensors and lights.
17. **The Ancient Tropics of Kansas City.** Learn how scientists study the internal structure of 300 million year old tropical swamp plant fossils from our area when plants looked nothing like they do today!
18. **Secret Codes You Use Every Day.** Create your own 'secret' code bracelet and learn how digital devices like your phone, computer and camera share information.
19. **Don't Judge an Organism by its Looks: Untangling Biological Relationships.** Learn how biologists discover & demonstrate the evolutionary history of organisms.
20. **Women in Medicine and Science.** Come and learn about careers in medicine, science and the health professions.
21. **Intro to Biotechnology.** Explore the current techniques used in medical biotechnology to diagnose a disease.

Bring a friend & join us for more STEM Fun at our 2016 EYH Saturday Program for Girls!

- Spend 2 Saturday mornings (Feb 20 & March 5) investigating and exploring fun STEM projects.
- Learn about STEM careers through hands-on experiments that show real world work!
- Experience some of the actual science and math which these mentors use in their jobs.
- Work in groups of 10 or fewer to explore a specific STEM career path with women working in a STEM career!

Sign-up forms are now available! To learn more about the EYH Saturday Program, e-mail us at soriley@sciencepioneers.org for dates and additional information.