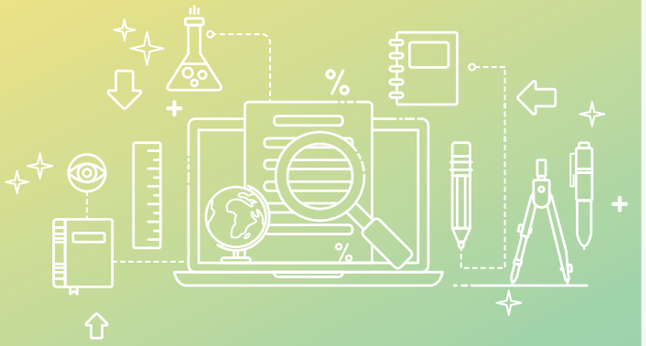

expanding your horizons

A Hands-On STEM Conference for Middle School Girls and their Parents

APRIL 29, 2017

JACOBS SCIENCE BUILDING
UNIVERSITY OF KENTUCKY

University of Kentucky

SCHEDULE OF EVENTS

Welcome Reception

8:30 am Registration and Group Assignment, **JSB Atrium**
9:00 am Welcome, Ellen Crocker | Icebreaker Activity, Carmen Agouridis, **JSB 121**

Morning Workshops

Students

10 am Workshop Session 1
11 am Workshop Session 2

(See your individual schedule for room locations)

Parents & Guardians

10 am Parenting in Pink & Blue
JSB 121
Andrew Nelson & Ilyssa Salomon, *Graduate Students, Dept. of Psychology*

11 am Parenting a STEM Girl in a Man's World
JSB 121
Kate Eddens, *Associate Professor, College of Public Health*

Lunch & Opportunities

12:00 pm Lunch and Opportunities Fair, **JSB Atrium**

Afternoon Workshops

Students

10 am Workshop Session 3
11 am Workshop Session 4

(See your individual schedule for room locations)

Parents & Guardians

1 pm What Does Higher Education Look Like Today?
JSB 121
Ingrid Allen, *College Counselor, Trinity Christian Academy*

2 pm Affording College
JSB 121
David Scott, *Outreach Counselor, KY Higher Education Assistance Authority*

Closing

3 pm Closing Remarks & Prize Drawing, **JSB 121**

About Expanding Your Horizons

The Expanding Your Horizons Network is a volunteer community of STEM professionals, educators, parents, community leaders, and government and corporate representatives from around the world.

A major goal of EYH is to enable girls to recognize their potential and pursue opportunities in science, technology, engineering and mathematics.

www.eyhn.org

Support for this event was provided by KY NSF EPSCoR, the University of Kentucky's College of Arts & Sciences, the College of Agriculture, and Forest Health Research and Education Center.

College of Arts and Sciences
Agriculture, Food and Environment
KY NSF EPSCoR
Forest Health Research & Education Center

Student Workshop Descriptions

A | **Muscle Activity in Injury and Sport.** Learn about how electrical activity in the muscle works, how it plays a part in injuries in sports and rehabilitation, and how muscle activity can relate to movement.

B | **Would you rather lick your phone or a toilet?** Good or bad, bacteria are everywhere! Today we'll investigate how much bacteria is present in typically gross places, like toilets, and places you might not expect it-- like your phones!

C | **The Spice of Life: Antibiotic Properties of Spices.** Have you wondered how illnesses were treated before an ambulance could come pick you up and take you to the hospital, before modern medicine? Here you'll create your own "medicine" from natural spices found in plants!

D | **Bacteria's Most Wanted.** A bunch of bacteria have been spotted and are up to no good. Join us on an investigative journey to identify different types of bacteria using mugshots, clues, and special equipment.

E | **The Chemistry in Cooking.** Molecular Gastronomy is the study of the chemical and physical transformations that occur while cooking. Students will perform experiments to understand the chemistry behind spherification of edible biopolymers.

F | **The Physics of Rockets.** Did you know that squid move through the ocean using the same principles of physics that allow us to launch rockets and shuttles? Jet propulsion! And you can (safely) make your own rocket out of things you can find in your home! How high will your launch be?

G | **The Chemistry of Fruit: Measuring Vitamin C Content.** Vitamin C is important for your health. This vitamin is present in certain fruits and vegetables. Learn how you can measure the amount of Vitamin C in food and find out which fruit or vegetable contains the most!

H | **Hot Spots in Motion: Dating the Hawaiian Volcanoes.** Why is the Earth is broken into jigsaw puzzle-like plates? Explore the ongoing activity occurring within a plate's interiors. Determine the age relationships of lava flows from volcanoes, learn about plate motion, and predict the formation of new islands.

I | **Water runoff.** Each group will construct prototypes of storm drains and sewage drains, then contaminate and decontaminate a water source. You'll learn how storm and sewage drains work and their relationship to water cleanliness and protection.

J | **What Moves You.** Participants will learn about how the brain controls body movement through a hands-on activity! Utilizing electricity, participants will see how muscles can move when neurons are stimulated by external sources.

K | **Natural History Notes.** We will explore how we can use what an organism looks like, and the tracks it leaves behind, to learn about its eating behavior and habitat.

L | **Fish are Friends, Not Food...** Treating cancer and other diseases can begin with the smallest of animals. To look at these small animals, we will use a light microscope to explore the similarities between zebrafish and humans.

M | **From Beans to Bubbles.** Did you know plants can power your car? Come learn how biofuels are made and what we can do with their byproducts! We will create soap from soybeans and learn why certain fuels are used more than others!

N | **Befriend a Tree!** Spend an hour in the life of an urban forester with a fun outdoor workshop on UK's campus! Identify and investigate the ecosystem benefits of your very own tree!

O | **Gastronomic Batteries.** Did you know you can make batteries from fruits and vegetables? Join us to learn how batteries work and how to build your own gastronomic batteries using things you can find around the house!

EYH Planning Chairs

Ellen Crocker (Forestry)
Susan Odom (Chemistry)
Bradford Condon (Plant Pathology)

Opportunity Fair Chair

Christy Payne (Chemical Engineering)

Parent/Guardian Session Chair

Sue Scheff (AAUW & KY Girls STEM Collaborative)
Lou Hirsch (Plant Pathology)

EYH Planning Committee

Carmen Agouridis, Bradford Condon, Cagney Coomer, Ellen Crocker, Ester Edwards, Lou Hirsch, Randolph Hollingsworth, Metty Joseph, Kim Leonberger, Susan Odom, Christy Payne

Invited Speakers

Carmen Agouridis, Ingrid Allen, Kate Eddens, Andrew Nelson, Ilyssa Salomon, David Scott

Team Mentors

Carmen Agouridis, Mary Arthur, Summer Brown, Mark Crocker, Martha Grady, Elizabeth Head, Nicholas Heebner, James Krupa, Karla Lightfield, Ann Morris, Susan Odom, Chad Risko, Hollie Swanson, Sylvie Garneau-Tsodikova, David Weisrock

Student Workshop Leaders

Alexa Johnson, Kelsey Picha, Carolina Quintana, Alyson Ackerman, Annie Baker, Mariah Montgomery, Cameran Jones, Katie Ellis, Angela Jones, Lydia Hager, Rachel Maggard, Brittany Rice, Kerri Beth Slaughter, Jean Branttie, Sam Heuer, Kevin Kelley, Rachel Hartmann, Kate Collins, Audrey Stoess, Emily Dennis, Taylor Lundy, Elena Manauis, Ashley Lay, Rachel Hoar, Meredith O'Dell, Stephanie Sparks, Mollye Malone, Britteny Ruggles, Emily Salmon, Prachi Raichur, Meghan Turner, Brittany Slabach, Beth Young, Rachel Sieg, Meredith Eckstein, Lydia Fletcher, Michelle Shamroe, Amelia Baylon, Emily Mastoroudis, Hunter Dykes, Chloe Vorseth, Alysia Kohlbrand, Thuy Nguyen, Kaili Ajim