

Expanding Your Horizons

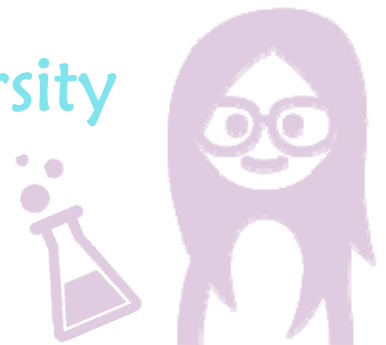
STEM Career Day for Young Women



Discover Your Sci-identity

The Pennsylvania State University

January 28th, 2017



Welcome!

Welcome to the 2017 Expanding Your Horizons: STEM Career Day for Young Women at Penn State University! The purpose of this event is to help you explore the college and career options that science, technology, engineering, and math (STEM) have in store for you.

We have a **“Discover Your Sci-identity”** theme for this event because we hope the sessions you experience and the people you meet help you realize that **STEM can be part of who you are, what’s important to you, and who you want to be!** You have many important choices coming up in your life and we are so excited that you are here to learn what’s out there and ask your questions. We hope you have a fantastic time!

- The Penn State Science Outreach Team

EYH 2017: EVENT SCHEDULE

Time	Session	Location
9:00—9:20AM	Check-In: Check in and pick up your T-shirt, bag, packet, and more!	Lobby outside Rm 100 Life Sciences Building
9:00—9:50AM	Career EXPO: After you check in, explore the exciting EYH Career EXPO with your parents/guardians	3rd and 4th floor Life Science Bridges
10:00—10:30AM	Welcome and Keynote Address: Meet your mentor and hear our keynote speaker: Olivia Pavco-Gaccia (CEO, LabCandy)	Rm 100 Life Sciences Building
10:30—10:45AM	Transition: Travel with your group to your first workshop destination	Various locations throughout Penn State’s campus
10:45—11:45AM	Workshop Session #1: Experience hands-on exploration of a STEM career field with your group!	Various locations throughout Penn State’s campus
11:45AM—12:00PM	Transition: Travel with your group to lunch	3rd floor Life Science Bridge
12:00—12:50PM	Lunch: Enjoy lunch with your group. Check out our photo booth if you have time!	3rd floor Life Science Bridge
12:50—1:00PM	Transition: Travel with your group to your second workshop destination	Various locations throughout Penn State’s campus
1:00—2:00PM	Workshop Session #2: Experience hands-on exploration of a STEM career field with your group!	Various locations throughout Penn State’s campus
2:00—2:15PM	Transition: Travel with your group to your third workshop destination	Various locations throughout Penn State’s campus
2:15—3:15PM	Workshop Session #3: Experience hands-on exploration of a STEM career field with your group!	Various locations throughout Penn State’s campus
3:15—3:30PM	Transition: Travel with your group to the Panel and Closing session	Rm 100 Life Sciences Building
3:30—4:00PM	Panel and Closing: Hear the advice and stories of our student and faculty panelists! Pick-up is at 4pm, but don’t let the STEM	Rm 100 Life Sciences Building

Workshop Sessions and Locations

Each group will be going to a unique set of three workshops throughout the day. Information on where your group will be going is below. **Please make sure to stay with your group and your mentors as you rotate between these sessions!**

GROUP 1 Workshops	Session Name and Location
#1 (10:45—11:45AM)	Exploring the Possibilities of 3D Printing (Whitmore 113)
#2 (1:00—2:00PM)	Ship Design Team Challenge (Whitmore 108)
#3 (2:15—3:15PM)	Converting Chemistry to Electricity: The Lemon Battery Challenge (Whitmore 115)

GROUP 2 Workshops	Session Name and Location
#1 (10:45—11:45AM)	Secrets and Codes (Life Science 10)
#2 (1:00—2:00PM)	Exploring the Possibilities of 3D Printing (Whitmore 113)
#3 (2:15—3:15PM)	Create Your Own Black Hole (Life Science 9)

GROUP 3 Workshops	Session Name and Location
#1 (10:45—11:45AM)	Creative Science: Fun with Color Chemistry (Life Science 13)
#2 (1:00—2:00PM)	Magnetricks (Life Science 10)
#3 (2:15—3:15PM)	How Do Speakers Work? (Life Science 14)

GROUP 4 Workshops	Session Name and Location
#1 (10:45—11:45AM)	Marvelous Medicine (South Frear 108)
#2 (1:00—2:00PM)	Talk Techy to Me (Life Science 12)
#3 (2:15—3:15PM)	Magnetricks (Life Science 10)

GROUP 5 Workshops	Session Name and Location
#1 (10:45—11:45AM)	Fossils and Apes and Monkeys, Oh My! (Life Science 11)
#2 (1:00—2:00PM)	Marvelous Medicine (South Frear 108)
#3 (2:15—3:15PM)	Solving Crimes with Chromatography (Whitmore 114)

GROUP 6 Workshops	Session Name and Location
#1 (10:45—11:45AM)	Decoding DNA—The Thread of Life (Whitmore 109)
#2 (1:00—2:00PM)	Create Your Own Black Hole (Life Science 9)
#3 (2:15—3:15PM)	Creative Science: Fun with Color Chemistry (Life Science 13)

GROUP 7 Workshops	Session Name and Location
#1 (10:45—11:45AM)	Traffic Control Center Chaos (Life Science 9)
#2 (1:00—2:00PM)	Decoding DNA—The Thread of Life (Whitmore 109)
#3 (2:15—3:15PM)	Talk Techy to Me (Life Science 12)

GROUP 8 Workshops	Session Name and Location
#1 (10:45—11:45AM)	How to Change the World with Ideas (Life Science 14)
#2 (1:00—2:00PM)	Disease Detectives (Life Science 11)
#3 (2:15—3:15PM)	Make It Matter (in front of the Millennium Science Complex—MRI wing)

GROUP 9 Workshops	Session Name and Location
#1 (10:45—11:45AM)	Gaming Biology (Life Science 6)
#2 (1:00—2:00PM)	Make It Matter (in front of the Millennium Science Complex—MRI wing)
#3 (2:15—3:15PM)	A Slice of Light (Whitmore 110)

GROUP 10 Workshops	Session Name and Location
#1 (10:45—11:45AM)	Ship Design Team Challenge (Whitmore 108)
#2 (1:00—2:00PM)	Gaming Biology (Life Science 6)
#3 (2:15—3:15PM)	Disease Detectives (Life Science 11)

EYH Role Models!

There are almost 200 volunteers from the Penn State community who are here to serve as mentors, workshop leads, panelists, and more! We asked a few of them to share some initial stories and advice, but make sure to ask your own questions throughout the day!



Amina Grant: Penn State Senior, Environmental Systems Engineering

What is one cool thing that your interest in STEM has given you the opportunity to do? “Travel as a study abroad volunteer in Peru! In my college, they offer scholarships for students to travel with the Global Renewable Energy Education Network (GREEN) Program to places like Peru and Iceland. **I learned about water and wastewater challenges in Peru and experienced many amazing activities such as cliff jumping and climbing Machu Picchu.**”

Emily Lachman: Penn State Senior, General Biology

What motivational advice would you give to our EYH participants as they explore STEM college and career options? “**Don't be afraid to try new majors and switch it up while in college.** During my time at Penn State I have been in 4 different colleges with 4 different majors, and am still (hopefully) graduating on time. **By doing so I have been able to experience so many more things and really learn what I do and do not want to do the rest of my life.**”



Lauren Zieziula: Penn State Senior, Security & Risk Analysis

What motivational advice would you give to our EYH participants as they explore STEM college and career options? “Always believe that you can do anything you set your mind to! **Each semester I walk into a classroom that is largely made up of males. But, instead of that making me feel insecure or weak, I feel empowered in the fact that I can do anything just as well or better than the male sitting next to me.** Never become discouraged because the future is bright. And, always remember to inspire and empower one another because we're all in this together.”

Molly Sizemore: Penn State Freshman, Architectural Engineering

What career do you want to pursue with your STEM degree and why? “A plethora of factors contribute as to why I'm choosing to pursue an architectural engineering degree from the Penn State. I think the most prominent factor would be my adoration for mathematics...Creativity has always been another one of my strengths and I love to utilize it within my passion for drawing and painting. **By pursuing this degree, I am able to combine the two things I love most in life into a single career!**”

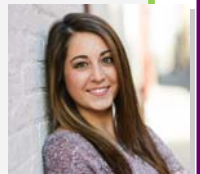


Megan Clarke: Penn State PhD Student, Kinesiology

What is one cool thing that your interest in STEM has given you the opportunity to do? “I have been able to **travel all over the United States to different conferences and to interact with very interesting people!** I am always excited to go outside of my comfort zone to meet someone new and gain their perspective that I otherwise would not have.”

Kayli Rentzel: Penn State Freshman, Mechanical Engineering and Spanish

What motivates you in your studies and what advice do you have for our attendees? “Mechanical engineering is an extremely male-dominated field and I **feel that with my degree and one day, my career, I can empower other young girls to challenge themselves and break the stereotypes.** Girls should view the statistics of gender in STEM fields as an opportunity rather than a hindrance. **YOU CAN DO IT! STEM can be hard but it's worth it in the end!**”



Theresa Lechner: Medical Writer, PhD in Immunology

What is one cool thing that your interest in STEM has given you the opportunity to do? “When I was in undergrad I did research on a chemical that is found in plastic bottles, called bisphenol A (BPA). At the time it was showing up in the news a lot about how it can leak out of the plastic in water bottles and Tupperware, so my lab was invited to speak with my state representative in Harrisburg. We got to speak with the representative about the chemical and how the state should be taking measures to prevent exposure to BPA.”

Nicole Famularo: Penn State PhD Student, Chemistry

What inspired you to pursue the STEM career path you are on now? “Once I got to high school and college, I took a couple of chemistry classes, and I realized that I liked knowing how things work, and how atoms and molecules interact. It felt good to know why oil and water don't mix, or why coffee eventually gets cold if you leave it out long enough, so it inspired me to pursue a PhD. In Chemistry!”



Famous Women in STEM!

Each of your groups is named after a well-known woman who successfully pursued (or is pursuing!) a STEM career. Take some time to learn more about them and get inspired!



Name: Elizabeth Blackwell (Medicine)
Born: February 3, 1821 in Bristol England

Occupation Highlights: The first woman to become a medical doctor in the United States.

Fun Fact: She wanted to pursue a medical profession because of a dying friend. She also went to Geneva Medical College in New York in the year of 1847.



Name: Jeri Ellsworth (Electrical Engineering)
Born: February 13, 1974 in Georgia

Occupation Highlights: Jeri is a self-taught computer chip designer and entrepreneur.

Fun Fact: For fun, she likes to restore vintage pinball machines, build and race stock cars, roller skate, and make videos for her widely followed Youtube channel.



Name: Françoise Barre-Sinoussi (Virologist)
Born: July 30, 1947 in Paris, France

Occupation Highlights: A virologist that helped identify HIV as a cause of AIDS.

Fun Fact: After visiting Africa, she started scientific exchanges with African and Asian countries. Françoise was awarded the Nobel prize in medicine in the year of 2008 for her discovery of HIV.



Name: Inge Lehmann (Seismology, Geophysics)
Born: May 13, 1888 in Osterbro, Denmark

Occupation Highlights: A seismologist who first discovered that Earth has a solid inner core, rather than a liquid one.

Fun Fact: She studied mathematics as an undergraduate, not seismology, which shows that it's okay to change your mind as you go!



Name: Wangari Maathai (Veterinary Anatomy)
Born: April 1, 1940 in Nyeri, Kenya

Occupation Highlights: The first woman in Eastern Africa to earn a PhD and the first African woman to earn a Nobel prize in humanitarian work.

Fun Fact: Wangari started a campaign called the Green-belt that has planted over 30 million trees to fight deforestation!



Name: Sally Ride (Astronomy)
Born: May 26, 1951 in Los Angeles, California

Occupation Highlights: First American woman to go into space, the third overall. She first went into space on the *Challenger* in the year of 1983.

Fun Fact: There are two elementary schools named after Sally! She was also the first astronaut to use a robotic arm in space.



Name: Mary Anning (Paleontology)
Born: May 21, 1799 in Dorset, Great Britain

Occupation Highlights: Paleontologist known for her fossil findings in Jurassic marine fossil beds.

Fun Fact: When she was only fifteen months old, she survived a lightning strike. Later in life, she sold her fossils to museums and collectors all over the world.



Name: Cornelia Bargmann (Neurobiology)
Born: January 1, 1961 in Virginia

Occupation Highlights: A neurobiologist who studies worms to figure out how genes influence behavior.

Fun Fact: In 2012, Cori was awarded the \$1 million Kavli Prize in Life Sciences for her work and in 2013 she won the Breakthrough Prize in Life Science for \$3 million.



Name: Elena Cornaro Piscopia (Mathematics)
Born: June 5, 1646 in Venice, Italy

Occupation Highlights: She was the first woman ever to earn a doctoral (PhD) degree. She went on to become a mathematics lecturer.

Fun Fact: By age 17, she was an expert musician. She played several instruments, including the violin and harp, and even composed her own music!



Name: Chien-Shiung Wu (Nuclear Physics)
Born: May 31, 1912 in Taichang, China

Occupation Highlights: Chien was a physicist whose contributions earned her the title, "First Lady of Physics".

Fun Fact: She was the first woman to be elected president of the American Physical Society and the first female faculty member at Princeton University.

STEM Exploration Doesn't End Here!

The adventure doesn't stop after EYH—we hope you leave this event full of ideas about STEM people, majors, careers, and activities that you would like to learn more about! We put information about a few resources below to help get you started. Happy exploring!

UPCOMING EXPLORATION-U EVENTS

The Penn State Science Outreach Office runs Exploration-U community science nights in partnership with local school districts. Our upcoming dates for the spring are below. We'd love to see you there!

- ◆ **Exploration-U Bald Eagle:** February 27th from 6-8pm @ Bald Eagle High School
- ◆ **Exploration-U State College:** March 28th from 6-8pm @ Mt Nittany Middle School



BOOK AND MOVIE RECOMMENDATIONS



Women in Science: 50 Pioneers Who Changed the World— This book profiles inspirational women who have changed the world through STEM, and includes beautiful illustrations!



Girls Think of Everything—Learn stories of how women and girls just like you used their creativity and STEM skills to bring their ideas to life!



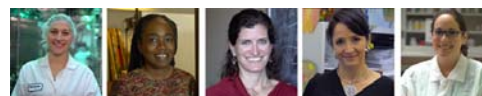
Hidden Figures—This movie shows how fearless, brainy women helped fuel the space race in the 1960s. There's a reason it was nominated for a *Best Picture* Oscar this year!



WPSU Penn State is launching an exciting project to inspire young women to enter careers in the captivating fields of science, technology, engineering and math (STEM). The **Women in Science Profiles (WiSci Files)** introduces viewers to five local women in diverse STEM careers through a series of short video profiles that will air on WPSU-TV and will also be available online. In addition to the videos, each of the five profiled women will participate in a live, online chat where they will interact directly with viewers.

Participate in the Project!

- ◆ Watch the videos at any time at: wpsu.org/wiscifiles
- ◆ Participate in the live chats at: wpsu.psu.edu/live-wiscifiles
- ◆ or by using Facebook Live, via our Facebook Page: www.facebook.com/wiscifiles



The live chats are currently being scheduled for February and March. To find out the dates and times, like or follow us on Facebook, Twitter or Instagram: @wiscifiles, or email us at wiscifiles@gmail.com.

We'd Love to Hear from You!

If you have any questions or comments about EYH, or would like to get added to the Penn State Science Outreach listserv, please have your parent/guardian email us (sciencecamps@science.psu.edu) or call us at (814)865-0083. You can also find us on Facebook at facebook.com/scienceupsu.