Alien Worlds
Did you know that space telescopes like Kepler and TESS have discovered thousands of alien worlds orbiting stars just like our Sun? Come build a mini planet system to observe a planet eclipsing its star and learn how astronomers use these observations to explore distant worlds. We’ll also show you how to become a citizen scientist and help with real scientific research from the comfort of your own home!

Chromatography Flowers
Create some colorful flower and butterfly decorations while learning about how ink and colors work and how scientists separate mixtures!

Fueling Your Gut Reactions!
Did you know that there are TRILLIONS of tiny microbes living inside your gut? Scientists refer to this community of microbes as the gut microbiome. Join us to learn about the chemical reactions these microbes carry out, both inside your intestines and during the production of some of our favorite foods!

Plant Domestication and Adaptation - A Seed Dispersal Game
Take part in a 10,000 year-long process called plant domestication by first becoming an ancient plant. You must adapt your “seeds” for dispersing in the wild as your survival depends on how far they travel. Then, become a modern plant and domesticate your “seeds” to help early farmers quickly gather enough food to survive.

Beetle Mania!
In this workshop you will design your very own beetle and take it on an adventure! As a new resident of an island habitat, your beetle will be subjected to various forms of environmental stressors which can contribute to natural selection.

Design a Lego Spacecraft
Do you have what it takes to design a spacecraft? Do you enjoy building with Legos? Come show off your building skills and learn about the challenges of designing a satellite to survive space.
Dancing with the Bots
Thanks to technology, it’s easier than ever to stay connected even when we’re apart. With these technologies, we can communicate with our friends, share and access information with others, and even control robots on different planets -- places we have yet to explore. In this interactive workshop, you will learn about the technologies behind robotics and remote communication, culminating in making a collaborative robot dance choreography.

“de-spelling” the Magic of Coding
The goal of this workshop is to create a fun, easy-to-follow, and interactive experience that will help “break the coding language barrier”. You will gain confidence in basic coding skills, such as navigating a terminal environment and generating/using variables in python. You will also be provided with a list of resources to continue building upon these skills on your own!

The Chemistry of Lava Lamps
Have you ever wondered how lava-lamps work? Using basic kitchen supplies, you can learn about the chemistry behind lava lamps and build your very own!

Navigating the Solar System
Create a quick and easy map of the Solar System that shows its true scale, and discover the challenges of spacecraft navigation and communication, all in this fun and engaging activity that you can share with others in your school and community!

SNIP SNIP Genetics
What if we told you it is possible to change the physical characteristics of living things, such as making an apple orange or blue? All these physical characteristics, called phenotypes, are encoded into the genetic instructions found in our DNA. Come learn about the molecular mechanisms underlying CRISPR gene-editing technology, and how we can use it to treat diseases, make research discoveries, and improve the crops that feed the world.

What is mRNA?
We use a space exploration themed scenario to decode a secret message as an analogy to explain the central dogma of molecular biology!
**Using Density to Sort Recyclables**

You will see how recycling plants use density of different types of plastics to sort out everything we throw out! Then, you’ll learn what density is and how it differs from weight, why plastics might look the same to our eye, but are very different from one another, and how a simple liquid can be used to sort all the plastics!

**Instruments and the Art of Interference**

Create and learn about mesmerizing waves and interference patterns using sound waves and pendulums, and learn how oscillations can create beautiful art!

**Isolating Human DNA from Cheek Cells**

In this activity you will isolate your own DNA from cheek cells! Using very common household items such as salt, dishwashing detergent, and rubbing alcohol, you will follow our instructions and end up with a solution with your own DNA suspended!

**Time Travel From Home**

Travel to the Devonian of New York and the world from home! Explore Earth and its life through time with two online short activities.

**Magical Physics: Create your own Self-Rolling Can**

Did you know you can use physics to perform magic? In this demonstration, we will create a fun magically rolling can out of everyday items. And the best part is we’ll learn a little bit about energy along the way!

**Beyond Bacon: Why Fats are So Important**

Fats are a major component of some of our favorite foods, from bacon, to ice cream, French fries, and potato chips, but that is not all that fats are or do. This workshop/demo delves into the amazing world of unique roles that they play in our bodies. Fats help keep animals warm in the winter, hold your body’s cells together, keep you from turning into a mummy, and so much more. Join us to learn how they do it!
Exploring the Stars in Your Backyard

Have you ever looked up and wondered what is twinkling in the night sky? Let me show you how telescopes, binoculars, and your eyes help us discover the universe around us. This demo will get you acquainted with the tools to make all your stargazing adventures successful.

How Basic is your Drink? The pH of Everyday Materials

You will learn about acid/base concepts and test the pH of everyday household items using non-toxic indicator prepared from black bean soaking liquid! You will then test a set of recommended materials and any other household liquids available to you! Finally, we will form a hypothesis on the pH of a neutralized solution.

Glacier Flow on your Desk

What are glaciers? How do they form? Why are they important to us? This demo explains these by making glacier goo that flows on various topography.

Check out some photos from Virtual EYH 2020!

Follow Us! @CornellEYH
LAB TOURS
subscribe to our YouTube channel (EYH at Cornell) for lab tour videos!

Radioactive World
From energy to medicine to everyday life, radioactivity is all around us. As scientists, we solve problems and learn about different systems by using radioactivity in techniques including carbon dating and cancer therapy. Join us as we learn how to identify, detect, and understand fundamental nuclear chemistry!

Get the Scoop on Ice Cream
We take a lab tour of the Cornell Dairy plant to learn more about the industrial process of ice-cream production. Our video will help you understand the chemistry of ice cream ingredients and the process of ice cream making!

Fun with Fluorescence
Are you interested in seeing what goes on inside cells? Would you like to use a glowing jellyfish to do that? Through this tour, we will learn what makes things glow and how scientists are using glowing molecules to see the unseeable

Behind the Scenes of the Plants we Eat
Come learn about the secret life of tomato and its cousins, groundcherry and goldenberry! In this tour you will discover what is going on behind the scenes in the science of fruit crop development, as well as in the genetics of the plants themselves. Dive into the greenhouse to see how plants are grown for science, and meet us in the lab to extract the invisible genetics and create new plants that you might one day see in your grocery store!

Chemical Proteomics in the Abbasov Group
Tour our lab and meet our proteam! Jump into the innovative and exciting field of chemical proteomics! On the interface of chemistry and biology, our lab tackles huge issues in human biology (such as cancer, neurogenerative diseases, viral infections, etc.) by targeting significant proteins with small molecules that can interact with them and change their function. Take a tour of our lab to see how we're changing the world one experiment at a time!
Podcast Series

Polymer Chemistry - Plastics in your Everyday Life
Join us in our chemistry lab for a brief lesson on polymers and plastics! We will cover the seven most common plastics you may encounter and demonstrate some fun polymer properties.

Exploring the Crane lab
You will explore our lab space, learn about the types of equipment and instrumentation often found in protein chemistry labs and watch a few of them in operation! Throughout the tour, you will learn about what proteins are, why they are important, how we isolate them, and some ways they can be studied by scientists!

CHESS: an X-ray Research Laboratory utilizing Cornell’s Particle Accelerator
Researchers from all over the world come to CHESS (the Cornell High Energy Synchrotron Source) to use the X-rays produced in the lab to study all different kinds of materials. The 768-meter synchrotron ring was constructed in the 1960s and is buried 40 feet below the Ithaca campus. The machine is finely tuned to produce high energy X-rays for research in the 7 experimental stations within CHESS. During this tour you'll see an overview of the lab, hear an example from one of our staff scientists about what type of research is done at her beamline, and learn a bit about the backgrounds of people who work here.

Interested in more content? Check out our YouTube podcast series, “Meet a Scientist” and learn more about awesome women in STEM!

Subscribe to “EYH at Cornell” on YouTube!
KEYNOTE SPEAKER
Susan Daniel, PhD
Professor, Smith School of Chemical and Biomolecular Engineering, Cornell University

Panelists (L to R)
Michelle Moyal, DVM: Lecturer, Primary Care Surgery, College of Veterinary Medicine, Cornell University
Kerstin Nordstrom, PhD: Associate Professor, Department of Physics, Mount Holyoke
Melanie McReynolds, PhD: HHMI Hanna H. Gray and Postdoctoral Enrichment Postdoctoral Fellow, Princeton University
Sarit Markovich, PhD: Clinical Professor of Strategy and Associate Chair of the Strategy Department, Kellogg School of Management, Northwestern University
Ellen Fireman, MS: Senior Lecturer, Department of Statistics, University of Illinois Urbana-Champaign

Panelists (L to R)
Linda Wang, MS: Senior correspondent, C&EN News
Mariena Silvestry Ramos, PhD: Electron Microscopy Research Support Staff, Cornell Center for Materials Research
Chloe Castaneda, BA: Associate Scientist, UbiQD
Crystal Grant, PhD: Legislative Fellow, Tech Congress Office of Senator Elizabeth Warren
Michele Kocen, MS: Guidance Navigation and Control System Safety Engineer, Science Applications International Corporation (SAIC)
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QUESTIONS?

For FAQ and the most up-to-date information please refer to the EYH website:

www.eyh.cornell.edu

For general questions please email Berit Goodge, the conference chair at EYH@cornell.edu

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