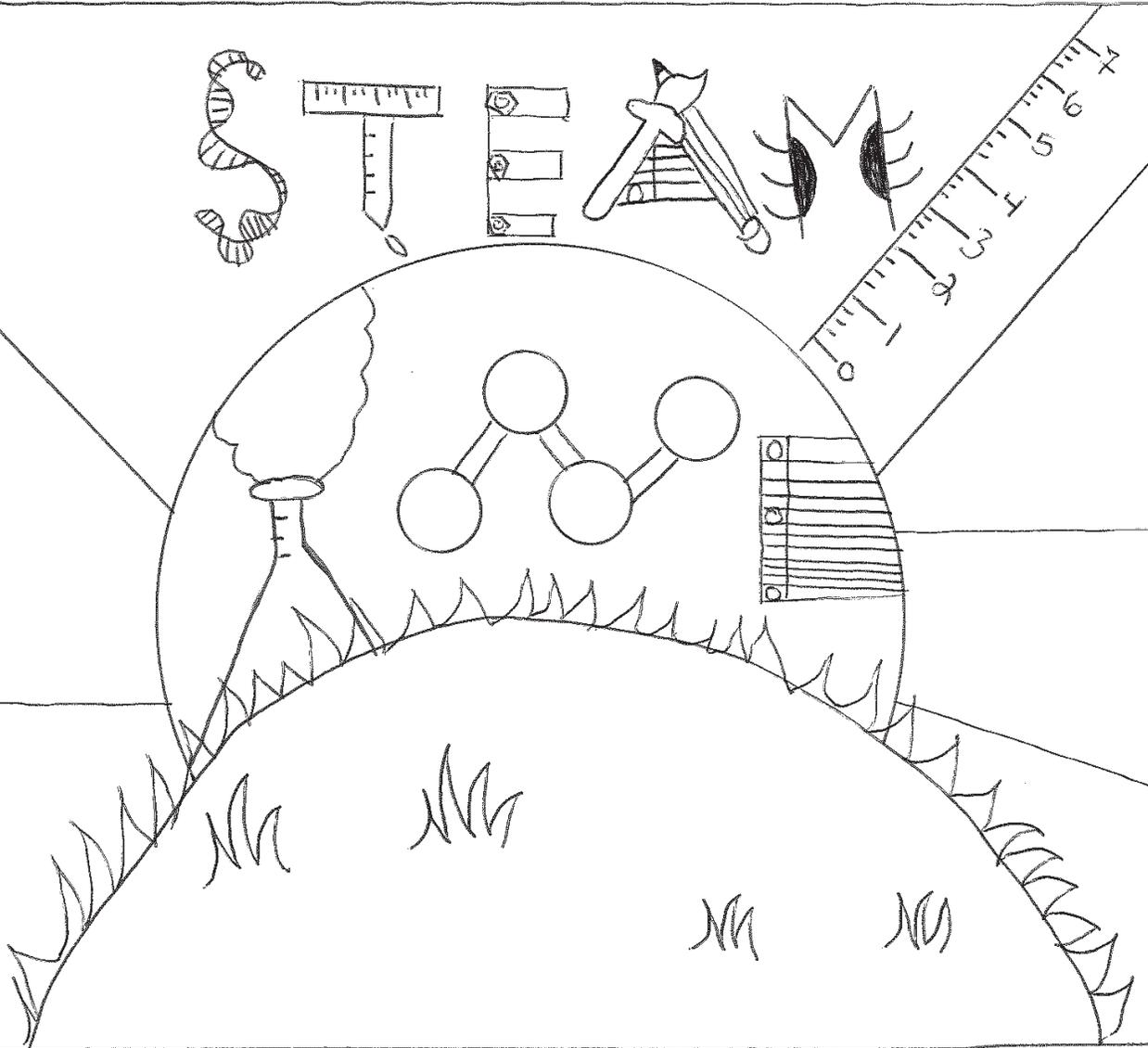


PATHWAYS TO YOUR FUTURE

EXPLORING STEAM CAREERS



PennState
York

MAY 12, 2017

LOGO DESIGN BY
LUSIANE DEJESUS

8th Grade Student from the STEAM Academy

IT'S WHAT'S ON THE INSIDE THAT COUNTS

Bacteria and other microbes are all around us. Commonly, we think of bacteria as 'bad guys' that we want to get rid of. But did you know that the majority of microbes are GOOD for you and other animals? In fact, without the good bacteria that live in our mouths and gut, we wouldn't be able to digest our food fully, or make the vitamins we need for growth. This lab-based workshop will allow students to look at everyday 'good microbes' under the microscope, including the bacteria found in yogurt that promote healthy digestion. We will also learn about a beneficial relationship between termites and a small, flagellated protist. This exercise will include a termite dissection to find the hairy little protists in the termite's gut.

Dr. Anne M. Vardo-Zalik
Assistant Professor of Biology
Penn State York

LEFT BRAIN + RIGHT BRAIN = DESIGNER BRAIN

Have you ever played the "logo game" where you use visual recognition to identify a company or brand? Chances are, some serious analysis of target market, cultural trends, and consumer psychology went into that simple design to make it recognizable and visually pleasing. At the heart of the creation is a graphic designer, who was charged with taking science and information and turning it into art. In this workshop, students will work with a graphic designer, turned entrepreneur, who will guide them through the design process to take a simple idea and turn it into a memorable work of art! Be prepared to draw!

Cara Bonadio Casillo, B.F.A.
Managing Partner
Duckpin Design

LICKS FOR BRICKS

Trade candy for bricks and build a structure that will withstand the elements. Challenge your mind while stimulating your taste buds, as your building is put to the test with simulated snow, wind, and ultimately...an earthquake!

Brittany Pavelko, EIT
Structural Designer
Carney Engineering Group, Inc.

Kerry Robinson
Executive Assistant
Carney Engineering Group, Inc.

MAKIN' TRACKS

Hit records are now being produced in homes all over the world. Take this journey to creating music using a computer. Combine technical know-how with your creative, artistic side. Learn to record music tracks, do basic mixing, use standard audio effects and burn your song to a CD.

Marcia L. Englar, A.S., B.M.E., B.M.U., M.M.
Instructor of Music
Millersville University
Applications Developer Administrator
Pennsylvania Department of Revenue

MARINE SCIENCE EXPLORATION: HOW IS A SQUID ABLE TO SURVIVE IN THE OCEAN?

Obtain information about an unusual mollusk, the squid, through discussion and dissection. This hands-on lab emphasizes how the form and function of the squid's basic anatomy helps this efficient predator survive in the ocean.

Lauren Albright
School Programs Coordinator
National Aquarium

ROBOGIRL

Learn about teamwork in this fun, hands-on workshop. First, you will build your own robotic Lego™ car and then you will get to set it in motion! You will use the computer to tell the robot what you want it to do. It can travel in a straight line, go in circles, or even bump into the wall and back up. This workshop combines engineering and computer science skills for a unique experience.

Amy Harmon Krtanjek, B.S., M.S.
Program Director for Engineering and Robotics
York County Day School

Frances M. Hopple, A.S., B.S.
Developer
Computer Aid, Inc.

Michael L. Marcus, A.A.S., B.S.E.E., M.S.E.E.
Associate Professor of Engineering
Penn State York

SIXTH SENSE

Can you see in the dark? Would you like to experiment with technologies of the future? In this workshop, we will use infrared imaging, ultrasonic testing, and radiological monitoring instruments to see and hear things that are normally invisible. Join us and learn how these instruments are used to predict failures and events!

Denise Ingoe
Mid-Atlantic Fleet Assessment Team
Operations Assessor
Exelon Generation
Peach Bottom Atomic Power Station

SPARKLING WITH CHEMISTRY

The science of chemistry governs the breathtaking fireworks display that we see on the Fourth of July. In this hands-on workshop, participants will learn about the chemical composition of sparklers, by examining the compounds that can be used to produce a variety of colorful sparks. They will then apply this knowledge to make and ignite sparklers of their own.

Dr. Andy Landis
Associate Professor of Chemistry
Penn State York

SPINNING THE WEB

Find out how programmers create Web pages in this hands-on workshop. We'll take your picture with a digital camera, and you'll use it to create your own Web page. You'll learn how to turn a simple text file into a Web page, how to get images to display, how to change background and font (type) colors, how to use different fonts, and how to use an image for a background. You'll go home with a copy of your own Web page and lots of references to helpful websites where you can get more images and information...for free!

Sean Breach, B.S.
Programmer/Analyst
Dentsply International
AJ DeWees
Penn State Alumna, 2015
Information Sciences and Technology

Kim Gross, A.S.
Development Coordinator
York County Economic Alliance

STARTING FROM SCRATCH - LEARN TO CODE!

Writing computer programs teaches skills in computational thinking and problem solving that are essential skills for all professions! In this workshop, students will be introduced to coding using the MIT-developed programming platform, Scratch. They will be guided to develop a simple program highlighting the basic coding structure and options available. They will then be given time in the workshop to develop their own projects where they could choose to animate a story, develop a simple interactive video game, or who knows what else they could create! Students will be able to save their creations so they are accessible to share with their parents, teachers and friends, and hopefully, will inspire them to take it further, and engage even more kids to code!

Joseph P. Royer, M.S.
Assistant Director of Information Technology
Adjunct Faculty in Information Sciences and Technology
Penn State York

TECH-SAVVY GIRLS

Have fun creating computer animation using the Alice programming language (<http://www.alice.org/>). Along the way we will learn some basic object-oriented programming principles and talk about a few information technology careers.

Bob Bartell, B.S., M.S.
Instructor in Information Sciences and Technology
Penn State York

THE SCIENCE OF COLOR IN COSMETICS

Why do certain nail polishes change color in the sunlight? What puts the sparkle in eye shadow? How do you know that yellow is really yellow? Is your red the same as your friend's red? How many different colors can we see? Why does one object appear blue while another object appears red? What is the science behind color perception? Pigments color the world around us. Discover the science behind the colors while practicing your formulation skills and making your own unique color of nail polish.

Mary Ritchey
Instructor in Chemistry
Penn State York

THE SCIENCE OF WEDDING PHOTOGRAPHY

How do you create a photo that'll make other people go wow! It's a little bit of instinct and some math and science. In this workshop, you'll learn to use the math and science techniques that Petronella Lugenwa has applied to her photography business to consistently deliver beautiful photos.

Petronella Lugenwa
Owner and Principal Photographer
Petronella Photography

THIS IS A HOLD UP!

Columns hold up things as varied as bird feeders and the roofs of Greek temples. Structural engineers design columns to meet many different needs. Learn how to predict the load that a simple column can support. Also, apply loads of up to a couple of hundred pounds to a few columns to see exactly how they begin to fall.

Dr. Charles Gaston, P.E.
Assistant Professor of Engineering
Penn State York
Magdalena Czyzykowski
Application Engineer
Kelvion, Inc.

Amanda Niebuhr, A.S., B.S.
Senior Test Engineer
BD Diagnostics

WHEN YOU CAN'T BREATHE NOTHING ELSE MATTERS

Respiratory therapists make a lifetime of difference to those who need help breathing. Join us for a glimpse into a career as a respiratory care practitioner. Learn about the situations that respiratory care practitioners assist with, skills learned in training, career mobility, credentialing and specialty options, and anticipated salary ranges. You'll also gain a little hands-on experience with respiratory therapy equipment like an Ambu bag, inhaler, spacer, endotracheal tube, trach, nebulizer, oxygen mask, peak flowmeter, and Incentive spirometer.

Justine Galentine
Registered Respiratory Therapist
Memorial Hospital

YOUR NAME IN SPACE - NEW

Why leave those letters in your name flat and lifeless, when you can give them 3-D depth and fullness? Come get your new-and-improved math/art today. Draw your name in 3-D letters, using some quick and easy tricks from 1-point perspective drawing! Even though the art tricks are quick and easy, they come with stump-worthy math questions to surprise and delight (and confound) you. Offer available while art supplies last.

Dr. Annalisa Crannell
Professor of Mathematics
Franklin & Marshall College

Visit us on the web:
<http://sites.psu.edu/pathways>
Email us at jbm30@psu.edu

Traveling to Penn State York

1031 Edgecomb Ave.
York, PA 17403

Penn State York is located in Spring Garden Township adjacent to the city-owned athletic and recreational facilities. The best routes to the campus are listed as follows:

From the Pennsylvania Turnpike:

Exit the Harrisburg/York interchange (Exit 18/242) and follow I-83 South. Exit I-83 at Exit 18 and follow directions below.

From the east or west via Route 30:

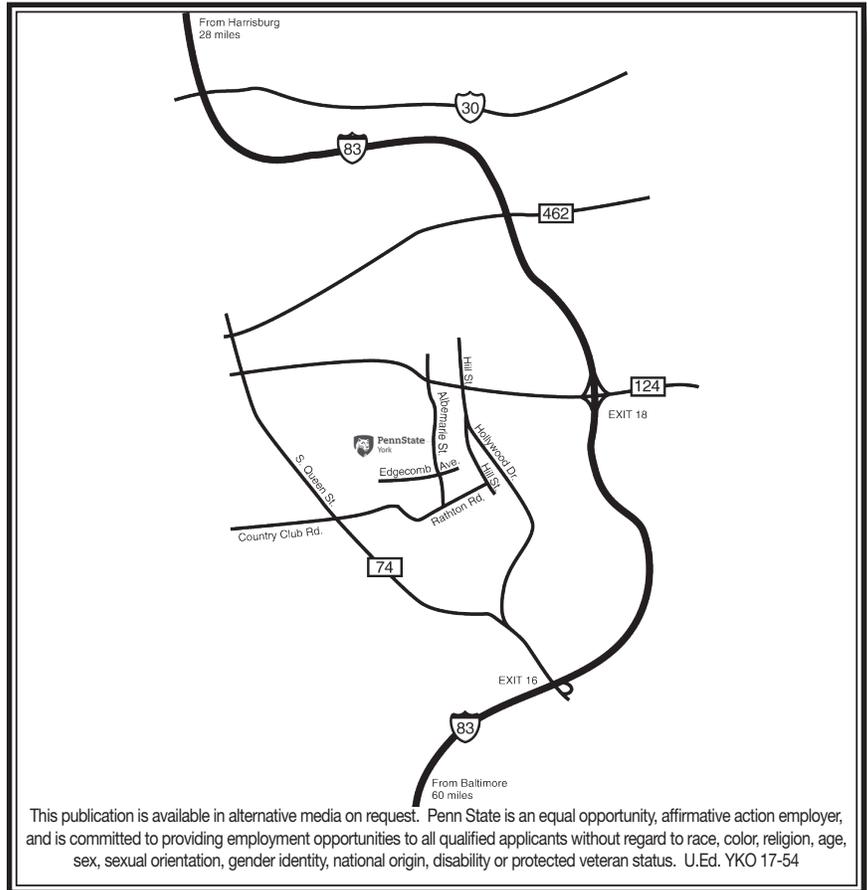
Take Route 30 to I-83 South to Exit 18. See directions from Exit 18 below.

From Exit 18 of I-83:

Proceed west on Route 124 for about 1 mile. Turn left on Albemarle Street. Follow Albemarle Street for five blocks to campus entrances on the right.

From the City of York:

Travel south on Queen Street to Rathton Road. Turn left on Rathton Road for approximately ½ mile and turn left at the campus entrance, there is an electronic sign for the campus. Follow the road and signs for parking for the Pullo Family Performing Arts Center.



The Pennsylvania State University encourages qualified persons with disabilities to participate in its programs and activities. If you anticipate needing any type of accommodation or have questions about the physical access provided, please contact Jamaira Unangst at 717-718-6721 in advance of your participation or visit.

All participants receive a specially designed Pathways tote bag, T-shirt, and flash drive.

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