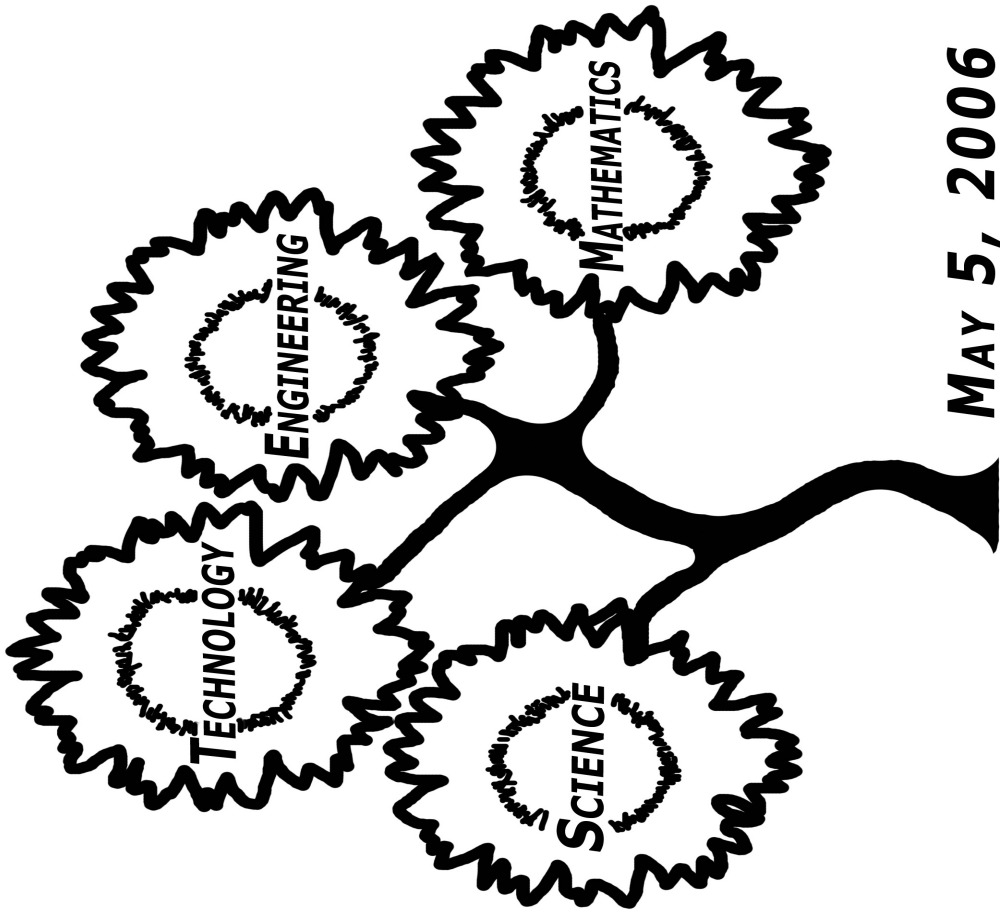


**PATHWAYS TO YOUR FUTURE
EXPLORING STEM CAREERS**



MAY 5, 2006

CELEBRATING OUR 10TH YEAR

PENNSTATE



**DESIGNED BY
NATHAN HAKE**

Traveling to Penn State York

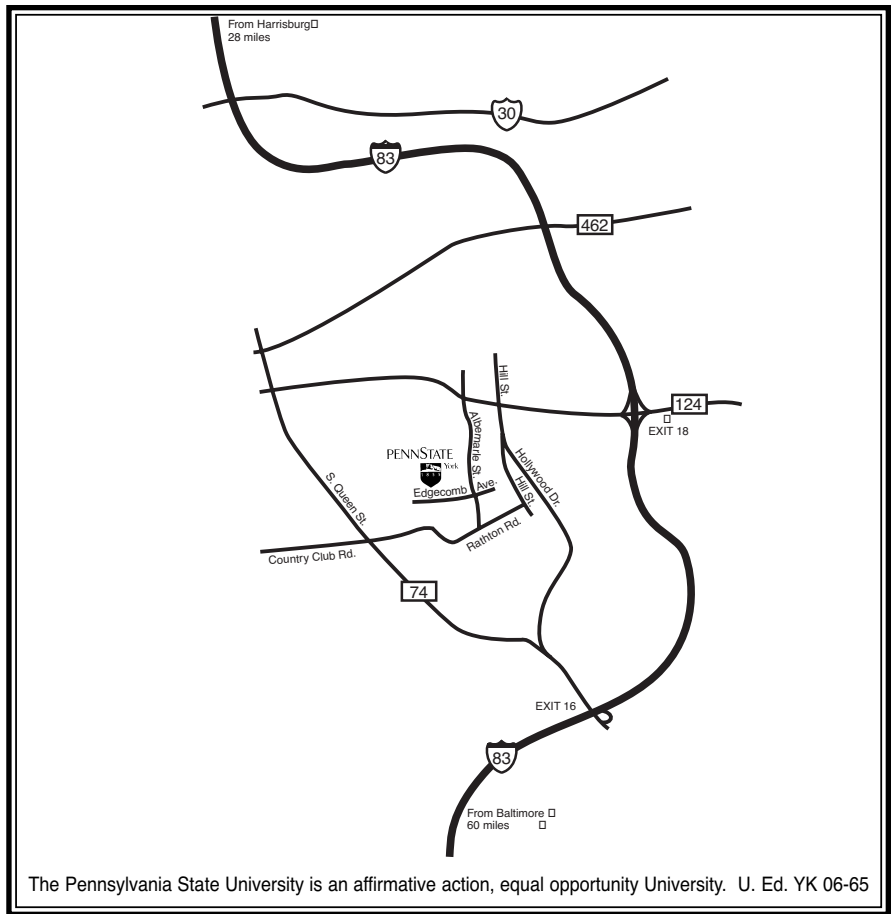
Penn State York is located in Spring Garden Township adjacent to the city-owned athletic and recreational facilities. The best routes to the campus are listed as follows:

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 one mile to Albemarle Street. Turn left on Albemarle for two blocks to campus entrances on the left.



The Pennsylvania State University is an affirmative action, equal opportunity University. U. Ed. YK 06-65

All participants receive a specially designed Pathways T-shirt and cloth tote bag.

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Pathways to Your Future: Exploring STEM Careers

Friday, May 5, 2006 - 8:00 a.m. - 2:00 p.m.

Penn State York • Pullo Family Performing Arts Center

Making Career Choices That “Add-up”

Pathways to Your Future: Exploring STEM Careers is a career awareness program for sixth through eighth grade girls highlighting opportunities in mathematics, science, engineering and technology. This free program brings together young women and professional women from academia, medicine, government agencies, business and industry for a day of workshops and discussion. It also provides teachers with information to guide young women toward career opportunities in science, technology, engineering, and mathematics (STEM Careers).

Registration

Please complete the registration form and return it to your teacher as soon as possible. Each participant will choose three workshops and three alternates from the list. Participants will be assigned to workshops on a space available basis. Teachers should return completed forms no later than Friday, March 31, 2006, to Suzanne Gladfelder, Penn State York, 1031 Edgecomb Ave., York, PA 17403. Ten students, one parent and one teacher from each school will be accepted.

Workshop Descriptions

Weather Watchers

Meteorologist MaryEllen Pann will discuss the field of television weather casting and other career possibilities in meteorology. You will participate in a brief forecasting exercise and presentation. Come discover the importance and fun of science and mathematics in weather forecasting.

MaryEllen Pann, B.S.
WPMT Fox 43 News

Designing Women

Expand your computer knowledge to the field of engineering. Explore geometric patterns that demonstrate how Computer Aided Design (CAD) works. Computer Aided Design is a great career for the independent thinker and innovator. CAD applications run the gamut from mechanism development to bridal gown pattern making.

Marge Runkle, A.E.,A.S.,B.S.
Instructor in Engineering
Penn State York

DNA Detectives

Did you know that the complexity of human chromosomes (the “stuff” from which we are made) reduces to four very simple repeating units? Amazingly, these same four repeating units define the diversity of all life, both plant and animal, on earth. Participants will gain insight into the nature of these DNA building blocks and at the same time learn how scientists and mathematicians isolate, study, and formulate mathematical models to relate the DNA from different organisms to each other. This workshop will be conducted in the Penn State York biology laboratory, and will be set up as a forensics-style investigation in which participants must use DNA statistical information to identify a criminal.

Dr. Carol M. Dorworth
Instructor in Biology
Penn State York

Dr. Robert Farrell, Jr.
Assistant Professor of Biology
Penn State York

Be a Modern Day Galileo

Repeat Galileo's famous inclined plane experiments using a modern day motion sensor connected to a computer and then graphically analyze the data to reveal the relationships between different physical quantities. What if Galileo's assumptions had failed?

Dr. Manel Wijesinha
Associate Professor of Statistics
Penn State York

Kip Trout, B.S.,M.S.
Senior Instructor in Physics
Penn State York

The Science of Color in Cosmetics

Why do certain nail polishes change color in sunlight? What puts the sparkle in eye shadow? How do you know that white is really white? Pigments color the world around us! Discover the science behind the special effects. Through the use of mathematics, participants will have an opportunity to practice their formulation skills and make their own nail polish. Then, they will use the mathematical description of color to analyze the products they made.

Dean L. Putt, B.S.
Research Scientist (Chemistry)
Armstrong World Industries

Dr. Marsha S. Bischel
Sr. Research Scientist (Materials Science)
Armstrong World Industries

Career Choices and Decisions

What's the best career for you? Will it be related to math or science? The key to effective career decision-making is knowledge of yourself and your options. Learn more about your interests, values, abilities, and personality and how to match those attributes to certain career fields. Careers implementing technology, engineering, and the sciences will be emphasized. Participants will complete a career inventory and will identify occupations to consider.

Christy Botdorf, B.S.,M.A.
Career Services Counselor
Penn State York

“It's 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 when they begin to fail.

Dr. Charles Gaston, P.E.
Assistant Professor of Engineering
Penn State York

Amanda Clark, A.S.
Electro-Mechanical Engineering Technology student
Penn State York

HSI – Health Scene Investigators

Math is used every day by employees in healthcare financial fields. In this workshop you'll experience what it is like to put on your investigative hats – review a medical record, record your data, and complete your results using a spreadsheet application (MS EXCEL).

Wendy Trout
Director Corporate Compliance
WellSpan Health

Interactive Storytelling

Reading stories is fun, but it's even more fun when you make up your own endings! Using a computer, you can create a story that seems like a game, because readers can change characters and actions along the way. Come to this workshop and we will show you how to create stories that interact with their readers.

Dr. Mary Beth Rosson
Professor of Information Sciences
and Technology
Penn State

Matthew Peters
Graduate Student
Information Sciences and Technology
Penn State

Program

8:00 a.m. - 9:00 a.m.	Registration
9:00 a.m. - 9:15 a.m.	Welcome
9:30 a.m. - 10:20 a.m.	Workshop I
10:20 a.m. - 10:35 a.m.	Break
10:35 a.m. - 11:25 a.m.	Workshop II
11:30 a.m. - 12:20 p.m.	Lunch
12:30 p.m. - 1:20 p.m.	Workshop III
1:30 p.m. - 2:00 p.m.	Special Guests – 10th Anniversary Celebration

Take Stock in Your Future

American Eagle, Nike, McDonalds, etc. Discover how your favorite brands can help pay for your college funding. Try your hand at financial planning as you determine your own college funding needs to pay for the career you want. Design a custom investment portfolio and track its performance using various forms of mathematical analysis.

Diana L. Mohn, CFP
The Financial Advisory Group

Tackling Topology

Join us as we work together to explore topology through mathematical games. No special training is needed - only a willingness to try new things and the ability to laugh with friends.

Deborah L. Gochenaur, B.S.,M.S.
Lecturer, American University

Polya's Plan for Pulverizing (Word) Problems

Ever struggled with a word problem in math class? In this workshop we'll explore George Polya's technique for problem solving that can help banish your word problem woes. We'll also discuss how problem solving can be used in your other classes, along with other areas of your life. Come discover the power of problem solving!

Joan Smeltzer, B.S.,M.S.
Instructor in Mathematics
Penn State York

Palm Reading: A Look into the

Future of Handheld Computing

Handheld computers currently boast features such as expandable memory, powerful applications, and wireless technologies. Discover the unlimited use of Palm Pilot handhelds and how they can be utilized in the workplace, specifically in the health care field. Various types of handhelds will be discussed, along with the emerging Smartphone technology.

Karen Bumbaugh, B.S.
Graduate Student

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.

Kathy Siegfried, B.S.
Youth Program Coordinator
National Aquarium in Baltimore

Tasty Towers

Try out your structural aptitude by designing and building a freestanding tower that's good enough to eat. Along the way we will learn about engineering concepts such as strength and flexibility. We will also discuss career choices in engineering with a focus on civil engineering.

Ellen Mouring Johnson, P.E.
Registered Professional Engineer in Maryland

“The Heat is On”

Do you think that only wood and coal can burn? With some chemistry knowledge and genuine effort you will be able to burn the most unusual substances . . . a fire extinguisher is not just a metal container. Would you like to discover the chemical that is in it and how it is used to put out a fire? Are you curious to see how we can burn money without losing it? Are you curious about fireworks? We do not need the Fourth of July to see them, do we? If you are interested in learning chemistry by doing exciting experiments you can join us in this workshop.

Dr. Natasha Turaki
Professor of Chemistry
Harrisburg Area Community College

Arithmetic for Artists

Who says you can't have a career that utilizes both the left and the right sides of your brain? Creative types with a knack for the technical can “**Have it All**” with careers in graphic design, electronic pre-press, or architecture. All of these fields require computer skills and mathematical aptitude while being intensely creative and highly varied. During this workshop, students will participate in a hands-on demonstration of Adobe Illustrator, a powerful drawing program used by designers to create images for print and Web applications.

Melanie Hady, B.A.
Hady & Company Graphic Design and Yorktowne Graphics

Getting Physical with Math and Science

Which math and science courses should I take in high school to prepare for a career as a physical therapist or as a physical therapist assistant? How will geometry, anatomy, and physics apply when treating an adult with a total knee replacement or a child with spina bifida? We'll answer these questions and help you test your strength, balance, and ability to maneuver a manual wheelchair.

Shannon Kern, PT
Lincoln Intermediate Unit 12

Julia Lehman, PTA
Hanover Rehab Centers
Pediatric Specialty Therapy Services

How Math and Science Help Animals

Dr. Angie Cheek, a veterinarian for small animals, will tell you about the journey of becoming a vet. She will discuss schooling including how math and science create a foundation for veterinary school. You will find out what a typical day is like for a vet, have a chance to evaluate some interesting radiographs, look at some internal parasites, and examine a collection of animal bones.

Angie Cheek, V.M.D.
Leader Heights Animal Hospital

It's All in the Game

Have you ever sprained your ankle and didn't know what to do? What happens if you put heat on it? What does putting ice on it do? Athletic trainers use physics, geometry, and chemistry to answer these questions. Come to this workshop to experience practical applications of science and math as we use tape and other supplies to treat a new athletic injury.

Sharon Hont, MS, ATC
HEALTHSOUTH - Shrewsbury