



2020

SUMMER EXPLORATION CAMPS

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A copy of HU's Annual Security Report, which reflects the current status and historical data of campus security and safety, is available at: <http://HarrisburgU.edu/lib/pdf/annual-security-report-clery-report.pdf>. You may request a paper copy of this report by contacting HU at Connect@HarrisburgU.edu

The Harrisburg University of Science and Technology is accredited by the Middle States Commission on Higher Education, 3624 Market Street, Philadelphia, PA 19104. (267-284-5000) The Middle States Commission on Higher Education is an institutional accrediting agency recognized by the U.S. Secretary of Education and the Council for Higher Education Accreditation.



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**HARRISBURG
UNIVERSITY**
OF SCIENCE AND TECHNOLOGY

A group of diverse students are gathered around a laboratory bench, looking intently at a piece of equipment. The setting is a well-lit chemistry lab with various glassware and metal stands visible. The students are dressed in casual attire, and their expressions are focused and curious.

2020

SUMMER EXPLORATION CAMPS

At Harrisburg University
of Science and Technology

Do you like to fix things, create, or understand how things work? Wouldn't it be great to explore the world with technology? Are you interested in creating and working with media? Are you interested in learning more about Health Care? Are you intrigued by Aquaponics?

Harrisburg University of Science and Technology has camps for all ages. There is something for everyone!

Harrisburg University of Science and Technology has created Summer Exploration Camps to invite students to experience a variety of STEM related activities working side by side with Harrisburg University faculty and students.

Each of the Harrisburg University Summer Exploration Camps takes a unique look at a field of science or technology, or the business of science and technology. While learning is the key goal for these day camps, you will be surprised how much fun you can have letting your imagination run wild with the potential inventions, technologies, or scientific issues you can explore.

These camps are for incoming third graders to seniors in high school.

All the camps are day camps, with the option of our new Residential Camp. Registration for these camps closes seven calendar days before the start of the camp.

REGISTER NOW!!

For more information and to register, visit:

<https://camps.HarrisburgU.edu/>

Registration closes seven days prior to the start of camp.

For information on the camps contact:

Shani Schalles

SSchalles@HarrisburgU.edu

717.901.5100 Ext. 1740

Harry Potter Potions

This Harry Potter themed camp will explore the science behind **Hogwart's wizarding magic**. The physical, chemical and biological basis of a variety of features such as potions, invisibility cloaks, disappearing inks, Bertie Botts' every flavor beans, and butterbeer will be explored through hands on activities and experiments. Each participant will be assigned to a Hogwarts "house" at the beginning of the camp, and will be given a sorcerer's wand.

This camp is for students entering 6th - 8th grade.

June 6-12, 9:00 AM - 4:00 PM | Cost: \$150

Harrisburg University | 326 Market Street, Harrisburg, PA
Instructors | Cathy Santai and Andrea Nagey

Emerging Medical Technologies

Did you ever wonder how doctors diagnose Strep throat in minutes? How the antibiotic you swallow works to treat infections? How can a drop of blood help diabetic patients? Healthcare is being revolutionized due to new biomedical technologies. There are rapidly changing diagnostics for infectious diseases. Novel methods for diagnostics and medical imaging now allow detection of cancer in very early stages, even before the symptoms appear. Biomedical devices such as blood glucose monitoring systems or insulin patches have helped millions. Prosthetics and other biomedical devices are being redefined with new looks and mind-boggling functionalities. Pharma companies are buzzing with development of new drugs, novel drug packaging, targeted drug delivery, and so on. Regenerative medicine and tissue engineering is making significant progress as well. If you are interested in making a career in healthcare, whether in medicine, pharma or any healthcare-allied fields such as biomedical devices or instrumentation, then this summer course is something you do not want to miss.

This camp is for students entering 9th - 12th grade.

June 6-12 (AM Only), 9:00 AM - 12:00 PM | Cost: \$125 (register for both AM/PM for \$200)

Harrisburg University | 326 Market Street, Harrisburg, PA
Instructor | Doug Taylor

Exploring Nanobiotechnology

Do you know the connection between your i-phone and nanotechnology? How come your sunscreen does not leave you looking like ghosts? Have you heard of intelligent materials that have memory? If these questions interest you, then you must sign up for this course.

This course is an introduction to nanobiotechnology—the use of very tiny structures (natural and synthetic as well) to develop new and innovative technologies for human applications, such as the blood glucose monitoring system. Nanobiotechnology has revolutionized cancer research, diagnostics, new drug development, tissue engineering, and prosthetics. The course is a great learning experience for students with cool and engaging hands-on activities. Future careers and possible job opportunities will be covered.

This camp is for students entering 9th - 12th grade.

June 6-12 (PM Only), 1:00 PM - 4:00 PM | Cost: \$125 (register for both AM/PM for \$200)

Harrisburg University | 326 Market Street, Harrisburg, PA
Instructor | Leena Pattarkine



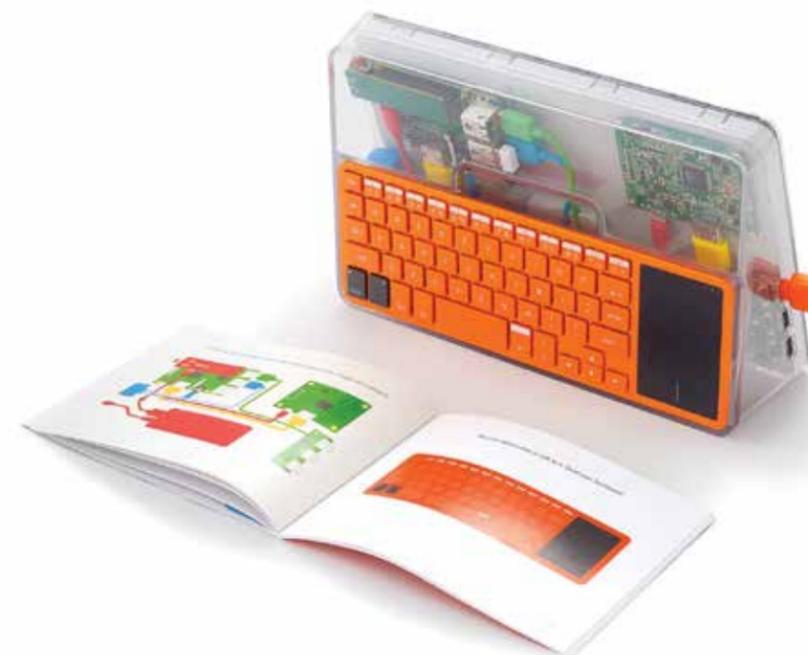
Raspberry Pi

In the Raspberry Pi Camp, students will engage in computer science topics utilizing the power of programming. The Raspberry Pi Computer platform will enable the students to learn how to manipulate aspects of a favorite video game called Minecraft through the use of introductory programming techniques. The best aspect of the camp is students will completely construct their own Raspberry Pi computer to bring home. Through these activities, students will learn an introduction to computer science and Python programming language to use with their new RPi Computer. The students will build and program their own Kano Complete Computer Kit. At the end of the week each student will take their computer home with them.

This camp is for students entering 9th - 12th grade.

June 6-12, 9:00 AM - 4:00 PM | Cost: \$350

Harrisburg University | 326 Market Street, Harrisburg, PA
Instructor | Victoria Brame



Drones & 3D Modeling

3D Modeling: Additive Manufacturing (3D Printing) is one of the fastest growing STEM fields. Students will explore this field by learning how to design, prototype, build and test 3D printed parts using the latest software and hardware. This activity is for beginners but it provides a building block for learning about rapid product development, fast prototyping and careers such as industrial design, manufacturing, and human factors.

Drone Camp: This program involves hands on training on the flying, responsible use and many practical applications of the technology to agriculture. Students will learn how to plan missions, collect aerial images and create custom maps using Unmanned Aerial Systems (UAS), Global Positioning Systems (GPS) and Geospatial Information Systems (GIS) technologies. Particular attention is paid to how drones provide the ability to create highly accurate aerial photos and maps with GPS and GIS software. Students will learn how these aerial photos and maps can be used for environmental monitoring, time sensitive event mapping and vegetation analysis.

This camp is for students entering 6th - 8th grade.

June 6-12, 9:00 AM - 4:00 PM | Cost: \$150

Harrisburg University | 326 Market Street, Harrisburg, PA
Instructors | Shane Jeffers and Albert Sarvis

IT Academy

This camp will give students the opportunity to gain hands-on experience with computer hardware. Students will learn about the components of computers, how they work together, and how to diagnose & repair issues with those parts. Students will revitalize old desktop computers by troubleshooting, repairing, and installing a new operating system. The goal is to teach students how to work through common computer issues and become informed technology consumers. The camp is suitable for total beginners and computer enthusiasts alike.

Students will leave this camp with their own PC that they have worked on during the camp. PC INCLUDED in the price of the camp.

This camp is for students entering 9th - 12th grade.

June 6-12, 2020, 9:00 AM - 4:00 PM | Cost: \$299

Harrisburg University | 326 Market Street, Harrisburg, PA
Instructor | Holly LeMaster

Harry Potter Wand Camp

Learn to program your magical coding wand and be a “Wizard” like in the magical wizarding world of Harry Potter. In this camp, students will be introduced to logic-based thinking concepts while developing programming skills to build magical spells to perform with their wands. Through 70+ step by step challenges students can be engaged in coding exercises that give them the ability to perform magic all while learning logically coding techniques. They will learn to connect code blocks and see how the JavaScript code works in the background to create programs. Through the activities in this camp, students will be introduced to looping, logic, and variables and their magical uses. At the end of the week, each student will take home their wand and tablet.

This camp is for students entering 3rd - 5th grade.

June 15-19, 9:00 AM - 4:00 PM | Cost: \$299

Harrisburg University | 326 Market Street, Harrisburg, PA
Instructor | Jonathan Korn



Aquaponics

Aquaponics is a method of growing plants hydroponically by using waste water from aquaculture as the source of nutrients. AgWorks @ Commonwealth Charter Academy in collaboration with Harrisburg University Faculty will serve as a living laboratory where students will explore biology, plant propagation, water chemistry, engineering design, and agricultural technology. In addition, students will explore career opportunities in emerging agricultural technologies.

This camp is for students entering 6th - 12th grade.

June 15-19, 9:00 AM - 4:00 PM | Cost: \$150

Commonwealth Charter Academy, 1 Innovation Way, Harrisburg, PA
Coordinator | Rachel Fogle

The Future of Health

Join Harrisburg University on a week-long adventure into the numerous and exciting Health Care Careers in your backyard. You will be experiencing many areas of the health care space from acute care in a hospital setting to the broad reaching environment of public health and safety. You will delve into the everchanging technical world of health care using data informatics and machine learning. You will also learn skills of communicating as a health care professional and focus on Healthcare by Design using Human Centered Design Thinking. Your week will conclude with solving a “wicked” problem in health care. Join us for this one-of-a-kind camp! Meals are included.

This camp is for students entering 9th - 12th grade.

June 15-19, 9:00 AM - 4:00 PM | Cost: \$200

Harrisburg University | 326 Market Street, Harrisburg, PA
Instructor | Geoffrey Roche

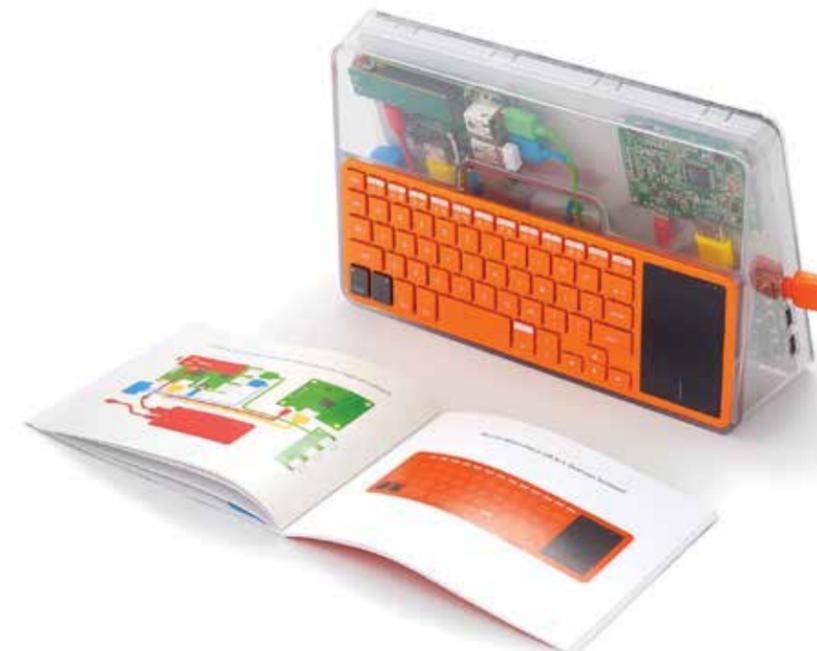
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This camp is for students entering 9th - 12th grade.

June 15-19, 9:00 AM - 4:00 PM | Cost: \$350

Harrisburg University | 326 Market Street, Harrisburg, PA
Instructor | Victoria Brame



Environmental Geospatial Technology Camp

This program involves hands on training in drone flight and the environmental sciences with a focus on environmental monitoring.

This will include practice flying of small drones and learning responsible use and practical applications of the technology to agriculture and water quality studies. Overall the students will learn how to plan missions, collect aerial images and create custom maps using Unmanned Aerial Systems (UAS), Global Positioning Systems (GPS) and Geospatial

Information Systems (GIS) technologies. Watershed activities will include mapping, sampling, and the use of augmented reality training to understand water quality issues. Particular attention is paid to how drones provide the ability to create highly accurate aerial photos and maps with GPS and GIS software. Students will learn how these aerial photos and maps can be used for environmental monitoring, time sensitive event mapping and vegetation analysis.

This camp is for students entering 9th - 12th grade.

June 15-19, 9:00 AM - 4:00 PM | Cost: \$250

Harrisburg University | 326 Market Street, Harrisburg, PA

Instructors | Michael Myers and Craig Lewis



Music Video Camp

This camp will introduce students to elements of making and producing a video. Campers will produce, direct, light, shoot, and edit like the experts as they make their own movies.

In this camp, students will learn to utilize titles, graphics, music, voice-over, and live-action video. At the same time, they will be growing their own leadership, communication, and creative design skills. Students will spend the week working with video cameras, production lighting, and Adobe editing systems as they shoot and edit their own videos from pre-production to production to post-production. In this one-week camp, students will be divided into teams and will have the opportunity to record, edit and produce a music video from pre-production, production and post-production. During this week, all aspects of video production will be covered. At the end of the camp, there will be a video screening to showcase the work of the students.

This camp is for students entering 9th - 12th grade.

June 15-19, 9:00 AM - 4:00 PM | Cost: \$250

Harrisburg University | 326 Market Street, Harrisburg, PA

Instructors | Caleb Smith and Ryan O. Wilson

IT Academy

This camp will give students the opportunity to gain hands-on

experience with computer hardware. Students will learn about the components of computers, how they work together, and how to diagnose & repair issues with those parts. Students will revitalize old desktop computers by troubleshooting, repairing, and installing a new operating system. The goal is to teach students how to work through common computer issues and become informed technology consumers. The camp is suitable for total beginners and computer enthusiasts alike.

Students will leave this camp with their own PC that they have worked on during the camp. PC INCLUDED in the price of the camp.

This camp is for students entering 9th - 12th grade.

June 15-19, 9:00 AM - 4:00 PM | Cost: \$299

Harrisburg University | 326 Market Street, Harrisburg, PA

Instructor | Holly LeMaster

Elementary STEM Camp

Summer STEM camps provide students with an opportunity to experience the fascinating world of science, technology, engineering and mathematics (STEM). Summer programs provide a fun way to explore unfamiliar subjects—potentially discovering new areas of interest. For students already interested in STEM, these camps build on existing interests or knowledge. Experiences such as these effectively encourage and inspire the next generation of STEM professionals. Even if your student decides upon a different career path, providing him/her with the opportunity to sample from the STEM smorgasbord is an invaluable experience.

This camp is for students entering 3rd - 5th grade.

June 22-26, 9:00 AM - 4:00 PM | Cost: \$150

Harrisburg University | 326 Market Street, Harrisburg, PA
Coordinator | Rachel Fogle

3D Printing for Medicine

The biomedical industry is a multi-billion dollar market and is growing significantly, hence offers many future career opportunities. In recent years, use of 3D printing and Bioprinting technology has been a hot topic for improved healthcare. 3D printing has already established its use in creating medical models for surgical planning and functional prosthetic devices for a personalized fit. Additionally, its application for bioprinting (printing fully functioning organs/implants) has been successful for several cases. In this introductory course, students will explore emerging careers in biomedical industry, with a focus on 3D printing, and its current/future applications. They will get hands-on experience in several aspects of 3D printing basics with focus on biomedical applications. If you are creative and like innovation, this will be your chance to explore this fast growing topic in biomedical field that is going to shape the modern approach to healthcare.

This camp is for students entering 9th - 12th grade.

June 22-26, 9:00 AM - 4:00 PM | Cost: \$225

Harrisburg University | 326 Market Street, Harrisburg, PA
Instructor | Jacob Grove



Raspberry Pi

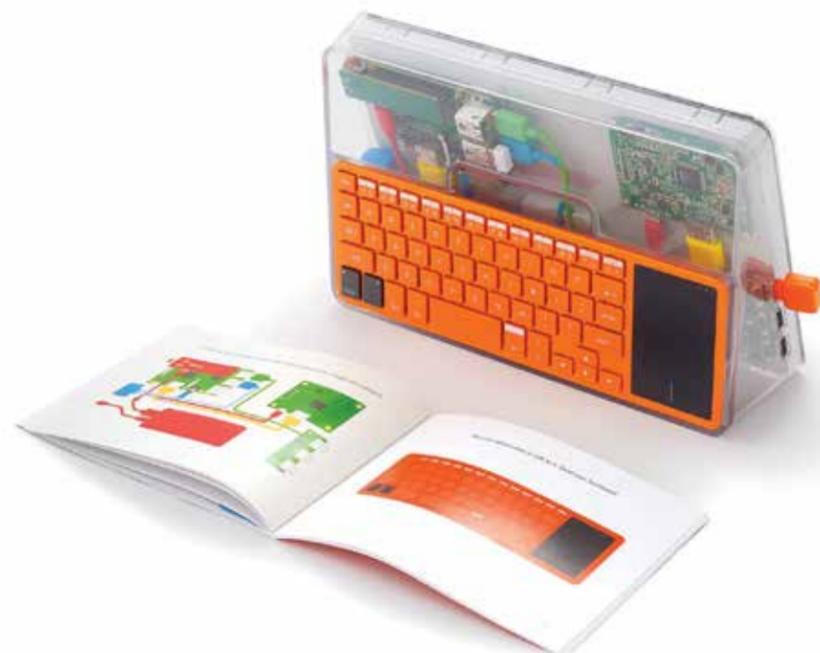
In the Raspberry Pi Camp, students will engage in computer science topics utilizing the power of programming. The Raspberry Pi Computer platform will enable the students to learn how to manipulate aspects of a favorite video game called Minecraft through the use of introductory programming techniques. The best aspect of the camp is students will completely construct their own Raspberry Pi computer to bring home. Through these activities, students will learn an introduction to computer science and Python programming language to use with their new RPi Computer. The students will build and program their own Kano Complete Computer Kit.

Students will leave this camp with their own PC that they have worked on during the camp. PC INCLUDED in the price of the camp.

This camp is for students entering 9th - 12th grade.

June 22-26, 9:00 AM - 4:00 PM | Cost: \$350

Harrisburg University | 326 Market Street, Harrisburg, PA
Instructor | Victoria Brame



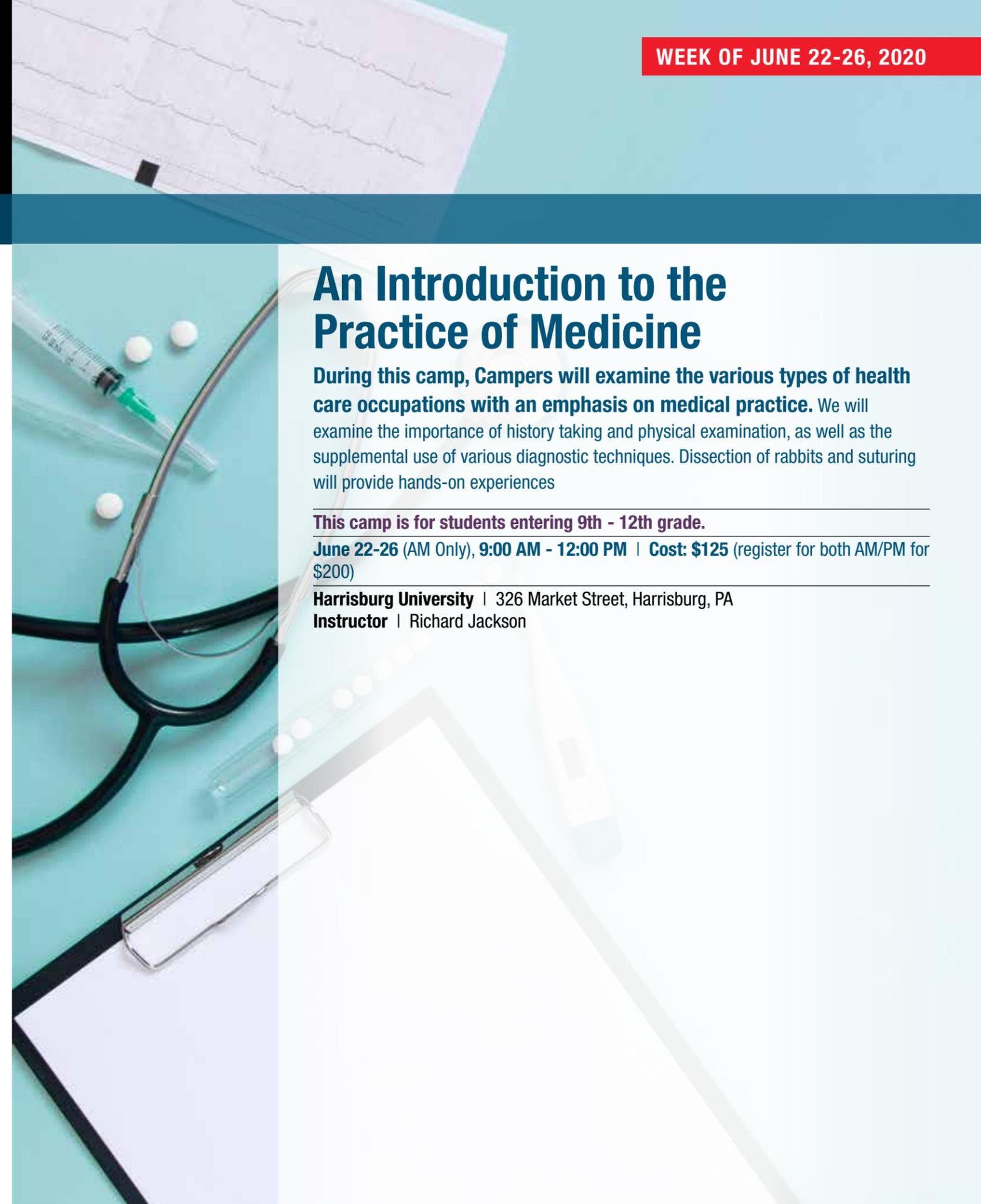
An Introduction to the Practice of Medicine

During this camp, Campers will examine the various types of health care occupations with an emphasis on medical practice. We will examine the importance of history taking and physical examination, as well as the supplemental use of various diagnostic techniques. Dissection of rabbits and suturing will provide hands-on experiences

This camp is for students entering 9th - 12th grade.

June 22-26 (AM Only), 9:00 AM - 12:00 PM | Cost: \$125 (register for both AM/PM for \$200)

Harrisburg University | 326 Market Street, Harrisburg, PA
Instructor | Richard Jackson



Forensic Science The Crime Lab Experience

This non-credit camp will introduce students in grades 9 – 12 to the inner workings of the crime laboratory, specifically within the fields of chemistry and biology. Students will learn the scientific theory, techniques and analytical interpretation of a variety of disciplines offered within a crime laboratory. Hands-on instruction, guest speaker and experiential learning will allow students to understand the probative value of physical evidence its role in the judicial system. The forensic science disciplines covered would include but are not limited to trace evidence analysis (hairs, fibers, gunshot residue), toxicology, serology & DNA Analysis and identification of unknown substances. At the end of this non-credit camp, students will be able to network with existing students, faculty, and staff who will assist in answering any questions the students may have about getting involved in the field of forensic science. Following hands-on activities, student will bring home: Mini Trace Evidence Collection kit (toolbox, forceps, tape lift, specimen jars, evidence tape, coin envelopes, swabs, magnifying glass) and an Harrisburg University bag.

This camp is for students entering 9th - 12th grade.

June 22-26 (PM Only), 1:00 PM - 4:00 PM | Cost: \$125 (register for both AM/PM for \$200)

**Harrisburg University | 326 Market Street, Harrisburg, PA
Instructor | Carrie Wise**

Designing Activism

Are you a problem solver? Do you like a challenge?

Then Design Thinking is for you! Design Thinking is one of the most powerful mindsets to address the big challenges (Wicked Problems) facing the 21st century. In this summer camp, students will be challenged with the task of working collaboratively and thinking critically to solve problems while engaging in unique and fun activities. Dynamic interactions within the week will lead the student down a path of becoming designers of their own world and help to make it a better place.

This camp is for students entering 9th - 12th grade.

June 22-26, 9:00 AM - 4:00 PM | Cost: \$150

**Harrisburg University | 326 Market Street, Harrisburg, PA
Instructor | Tamara Peyton**



Girls STEM Exploration Camp

Summer STEM camps provide middle school GIRLS with an opportunity to experience the fascinating world of science, technology, engineering and mathematics (STEM). Summer programs provide a fun way to explore unfamiliar subjects—potentially discovering new areas of interest. For girls already interested in STEM, these camps build on existing interests or knowledge. Experiences such as these effectively encourage and inspire the next generation of STEM professionals. Even if your student decides upon a different career path, providing her with the opportunity to sample from the STEM smorgasbord is an invaluable experience.

Female only camp for students entering 6th - 8th grade.

July 6-10, 9:00 AM - 4:00 PM | Cost: \$150

Harrisburg University | 326 Market Street, Harrisburg, PA
Camp Coordinator | Rachel Fogle

Aquaponics

Aquaponics is a method of growing plants hydroponically by using waste water from aquaculture as the source of nutrients. The Steelton-Highspire Aquaponics Greenhouse will serve as a living laboratory where students will explore biology, plant propagation, water chemistry, engineering design, and agricultural technology opportunities. In addition, students will spend a full day at HU to learn the importance of water chemistry and tour the new Aquaponics Lab located within the Student Union at the Whitaker Center.

This camp is for students entering 6th - 8th grade.

July 6-10, 9:00 AM - 4:00 PM | Cost: \$150

Harrisburg University Greenhouse at Steelton Highspire High School,
250 Reynders Avenue, Steelton, PA
Instructor | Mylik Jupiter

Green Design: Environmental Sustainability for the Future

Introduce camp participants to the idea of green architecture through environmental sustainability and renewable energy resources. As resources such as water and fuel become more strained, sustainable design and environmentally friendly architecture increase in importance. This camp will explore ways in which urban areas are incorporating sustainable design to ensure resources can continue to be used for generations to come. During the camp, we will touch on urban planning, landscape architecture, and green design. Participants will work collaboratively to build out an ideal, self-sufficient model town using knowledge gained along the way about architecture, sustainability, and renewable resources.

This camp is for students entering 6th - 8th grade.

July 6-10, 9:00 AM - 4:00 PM | Cost: \$175

Harrisburg University | 326 Market Street, Harrisburg, PA
Instructor | Taylor Miller

Emerging Medical Technologies

Did you ever wonder how doctors diagnose Strep throat in minutes? How the antibiotic you swallow works to treat infections? How can a drop of blood help diabetic patients? Healthcare is being revolutionized due to new biomedical technologies. There are rapidly changing diagnostics for infectious diseases. Novel methods for diagnostics and medical imaging now allow detection of cancer in very early stages, even before the symptoms appear. Biomedical devices such as blood glucose monitoring systems or insulin patches have helped millions. Prosthetics and other biomedical devices are being redefined with new looks and mind-boggling functionalities. Pharma companies are buzzing with development of new drugs, novel drug packaging, targeted drug delivery, and so on. Regenerative medicine and tissue engineering is making significant progress as well. If you are interested in making a career in healthcare, whether in medicine, pharma or any healthcare-allied fields such as biomedical devices or instrumentation, then this summer course is something you do not want to miss.

This camp is for students entering 9th-12th grade.

July 6-10 (AM Only), 9:00 AM - 12:00 PM | Cost: \$125 (register for both AM/PM for \$200)

Harrisburg University | 326 Market Street, Harrisburg, PA
Instructor | Doug Taylor

Farm to Fork Agricultural and Food Biotechnology

Have you ever thought how Dannon or Activia brands sold in market relate to biotechnology? Golden Rice is a variety of rice fortified with vitamin A. This was developed by plant biotechnologists to help kids from developing countries not have fatal diseases resulting from vitamin A deficiency. Every time you sprinkle the meat-tenderizer powder, do you know you are using biotechnology? The powder contains an ingredient that softens the meat that is made using biotechnology. Food producers use Food Biotechnology to produce new products with desirable characteristics such as disease and drought resistant plants, leaner meat, enhanced flavors, and nutritional quality of foods.

If you find these topics interesting, then you should come and learn about this exciting field of applied science called Food Biotechnology in this fun-filled summer course.

This camp is for students entering 9th - 12th grade.

July 6-10 (PM Only), 1:00 - 4:00 PM | Cost: \$125 (register for both AM/PM for \$200)

Harrisburg University | 326 Market Street, Harrisburg, PA
Instructor | Jackie Maddox

Raspberry Pi

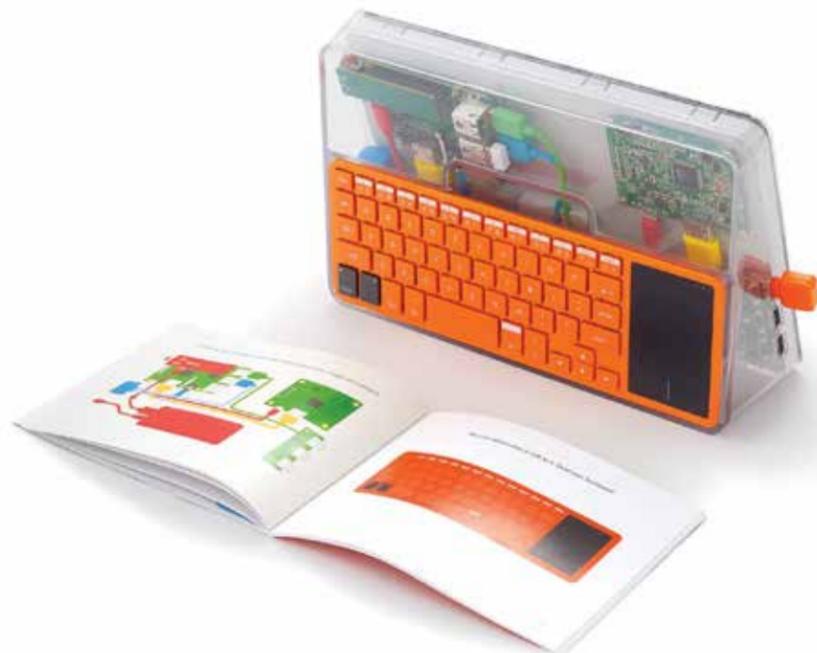
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Students will leave this camp with their own PC that they have worked on during the camp. PC INCLUDED in the price of the camp.

This camp is for students entering 9th - 12th grade.

July 6-10, 9:00 AM - 4:00 PM | Cost: \$350

Harrisburg University | 326 Market Street, Harrisburg, PA
Instructor | Victoria Brame



Forensics Investigation The CSI Experience

This camp will introduce students in grades 9 – 12 to Crime Scene Investigation through hands-on instruction, guest speakers, experiential learning and application of the theory and techniques used in forensic investigation. Students will learn how to properly identify, document and preserve physical evidence. Theory and techniques would include but are not limited to fingerprint processing and identification, impression evidence recovery and comparison, bloodstain pattern analysis, forensic entomology, anthropology, crime scene reconstruction, and questioned document examination. At the end of this non-credit camp, students will be able to network with existing students, faculty, and staff who will assist in answering any questions the students may have about getting involved in the field of forensic science. Parent Activity: This camp will include evaluation and interpretation of a Mock Crime Scene on Friday – This experience would also be available for parents to work along with their students. Following hands-on activities, student will bring home: 10-print cards with their fingerprint, Pocket magnifying glass with light, Mini fingerprint processing kit (toolbox, disposable magnetic brush, magnetic powder, lift cards, lift tape), Harrisburg University bag

This camp is for students entering 9th - 12th grade.

July 6-10, 9:00 AM - 4:00 PM | Cost: \$175

Harrisburg University | 326 Market Street, Harrisburg, PA
Instructor | Carrie Wise

Animation and 3D Modeling

This weeklong hands-on camp will introduce students to tools and techniques used in 3-D polygonal modeling. This creative and exciting camp opportunity will introduce students to tools and techniques used in 3-D polygonal modeling. Participants will use Maya, an industry standard, to explore creativity by modeling and animating objects, characters, and environments. After learning the basics, students will practice creating complex shapes and models moving at their own pace to advance their skills. This program is geared for students interested in careers ranging from architecture, to video games, to product design, to CGI films. Throughout the course, students will gain an understanding of career paths and delve into their creative interests and how it can relate to future endeavors.

This camp is for students entering 9th - 12th grade.

July 6-10, 9:00 AM - 4:00 PM | Cost: \$150

Harrisburg University | 326 Market Street, Harrisburg, PA
Instructor | Shane Jeffers

Environmental Design

Introduce camp participants to the idea of green architecture through environmental sustainability and renewable energy resources. In this camp we will focus on exploring ways of efficiency by gaining knowledge about our strained resources and figuring out alternative ways to preserve them. By the end of this camp we hope that participants understand the growing importance of environmentally friendly architecture. During the course of the camp, we will touch on urban planning, landscape architecture, and green design. Participants will work collaboratively to build out an ideal, self-sufficient model town using the Minecraft gaming program and a full hands on experience in which the participant will build a scale model.

This camp is for students entering 9th - 12th grade.

July 13-17, 9:00 AM - 4:00 PM | Cost: \$175

Harrisburg University | 326 Market Street, Harrisburg, PA
Instructor | Taylor Miller

Streaming Responsibly for Middle Schoolers

Ever wonder how much time and effort goes into the production of creating a livestream? Well here at Harrisburg University we are offering for the first time ever, a live-streaming camp. In this camp students will learn about the basic of live streaming. From the social media platforms that enabled it, to understanding the importance of the analytics behind it. Campers will also be taught how to use OBS Studio, one of the biggest well known live-streaming programs that many streamers use today to stream their content to the world. After attending this camp, students will be confident in using the skills they have learned at Harrisburg University towards potentially starting their own live streaming production in the future.

Students will take home the equipment that was used during the camp for their continued use at home, included in the price of the camp.

This camp is for students entering 6th - 8th grade.

July 13-17, 9:00 AM - 4:00 PM | Cost: \$300

Harrisburg University | 326 Market Street, Harrisburg, PA
Instructor | Stephen Gayle

LEGO® Robotics

In this camp, you will organize your own Robotic Manufacturing Company. Your company will have a designing, engineering, building and programming department. The LEGO robotics kit will provide us with the blueprints, sensors and parts that we need. You will design, engineer and wire the Lego robotic manufacturing arm. As the owner of the company, you will learn how to organize each department, set a vision, assign responsibility, appreciate finance and understand profitability.

This camp is for students entering 6th - 8th grade.

July 13-17, 9:00 AM - 4:00 PM | Cost: \$175

Harrisburg University | 326 Market Street, Harrisburg, PA
Instructor | Glenn Williams

Advanced Medical Technologies (Application Only)

Biotechnology has contributed significantly to improve the health-care industry. Discovery of new medicines, innovative devices for medical imaging and diagnostics are some areas that have seen tremendous commercial success. Gene Therapy and Stem Cell Therapy are considered as the only techniques that can offer cures for conditions such as Parkinson's and Alzheimer's. Tissue Engineering and Regenerative Medicine fields are making great discoveries in making organ transplants and artificial tissues to be a reality. All these developments utilize and depend on biotechnology concepts and methods. This course offers an opportunity for high school students to learn about the skills and techniques that enable development of innovative techniques. Students will learn about advanced biotechnology concepts and techniques with a significant experiential component. How cells can be manipulated at DNA- and protein- level for tuning their functional features for a desired outcome will be introduced. The course will consist of short lectures and a heavy laboratory component. There will be class discussions and a career-oriented view of the medical biotechnology sector. Students will be required to submit a letter of interest and a recommendation letter from their teacher/school administrator.

This camp is for students entering 9th - 12th grade.

July 13-17, 9:00 AM - 4:00 PM | Cost: \$399

Harrisburg University | 326 Market Street, Harrisburg, PA
Instructor | Leena Patterkine

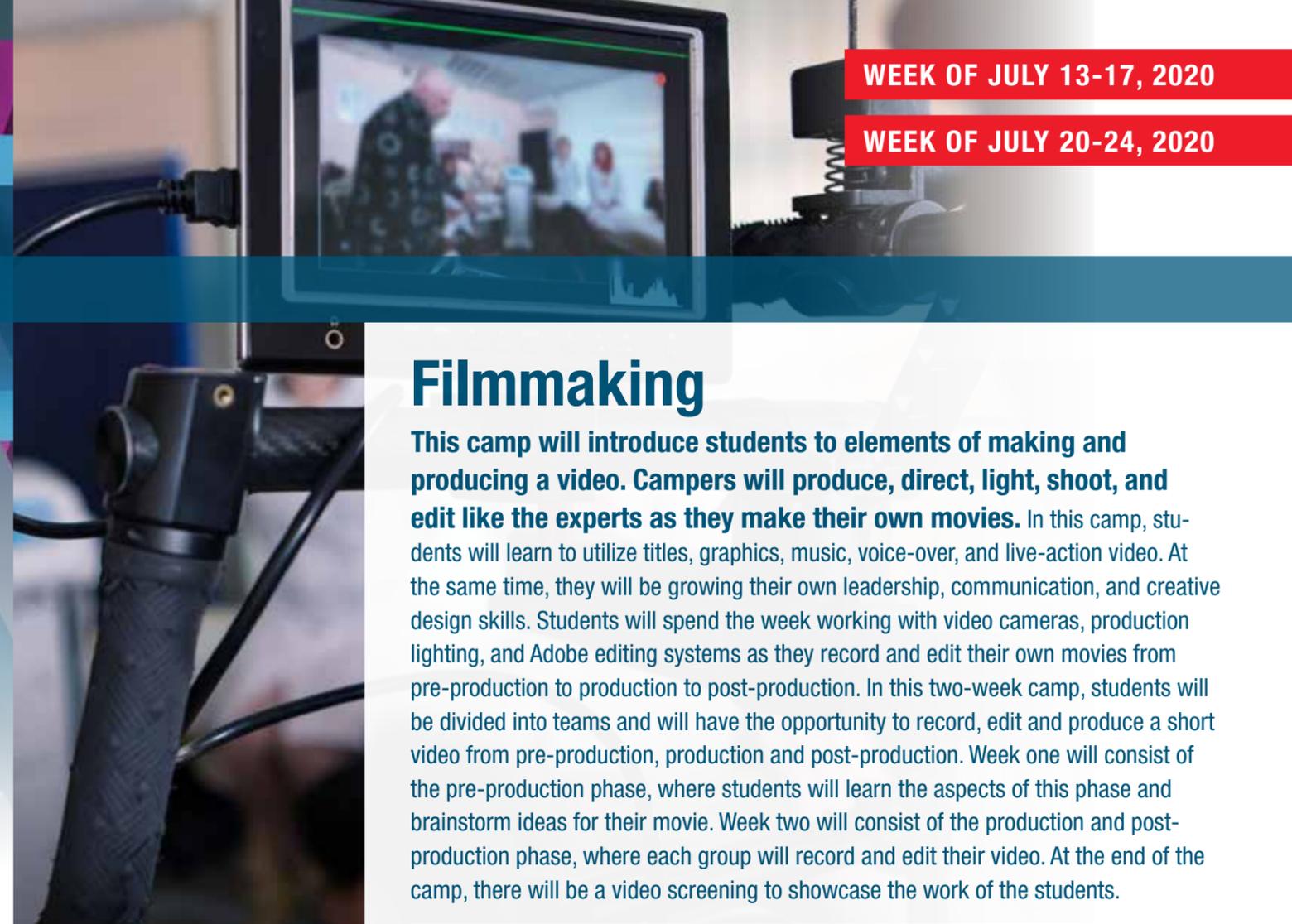
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July 13-17, 9:00 AM - 4:00 PM | Cost: \$350

**Harrisburg University | 326 Market Street, Harrisburg, PA
Instructor | Victoria Brame**



Filmmaking

This camp will introduce students to elements of making and producing a video. Campers will produce, direct, light, shoot, and edit like the experts as they make their own movies. In this camp, students will learn to utilize titles, graphics, music, voice-over, and live-action video. At the same time, they will be growing their own leadership, communication, and creative design skills. Students will spend the week working with video cameras, production lighting, and Adobe editing systems as they record and edit their own movies from pre-production to production to post-production. In this two-week camp, students will be divided into teams and will have the opportunity to record, edit and produce a short video from pre-production, production and post-production. Week one will consist of the pre-production phase, where students will learn the aspects of this phase and brainstorm ideas for their movie. Week two will consist of the production and post-production phase, where each group will record and edit their video. At the end of the camp, there will be a video screening to showcase the work of the students.

This camp is for students entering 9th - 12th grade.

July 13-17 and July 20-24 (Two Week Camp), 9:00 AM - 4:00 PM | Cost: \$350

**Harrisburg University | 326 Market Street, Harrisburg, PA
Instructors | Caleb Smith and Ryan O. Wilson**

Environmental Design

Introduce camp participants to the idea of green architecture through environmental sustainability and renewable energy resources. In this camp we will focus on exploring ways of efficiency by gaining knowledge about our strained resources and figuring out alternative ways to preserve them. By the end of this camp we hope that participants understand the growing importance of environmentally friendly architecture. During the course of the camp, we will touch on urban planning, landscape architecture, and green design. Participants will work collaboratively to build out an ideal, self-sufficient model town using the Minecraft gaming program and a full hands on experience in which the participant will build a scale model.

This camp is for students entering 9th - 12th grade.

July 20-24, 9:00 AM - 4:00 PM | Cost: \$175

Harrisburg University | 326 Market Street, Harrisburg, PA
Instructor | Taylor Miller

Exploring Nanobiotechnology

This is an introductory course to nanobiotechnology, which is the use of existing elements of natural systems to develop new technologies. This discipline helps to indicate the merger of biological research with various fields of nanotechnology. This technical approach to biology allows scientists to imagine and create systems that can be used for biological research. Includes active learning experiences for students working in collaborative groups.

This camp is for students entering 9th - 12th grade.

July 20-24 (AM Only), 9:00 AM - 12:00 PM | Cost: \$125 (register for both AM/PM for \$200)

Harrisburg University | 326 Market Street, Harrisburg, PA
Instructor | Leena Pattarkine



Farm to Fork

Have you ever thought how Dannon or Activia brands sold in market relate to biotechnology? Golden Rice is a variety of rice fortified with vitamin A. This was developed by plant biotechnologists to help kids from developing countries not have fatal diseases resulting from vitamin A deficiency. Every time you sprinkle the meat-tenderizer powder, do you know you are using biotechnology? The powder contains an ingredient that softens the meat that is made using biotechnology. Food producers use Food Biotechnology to produce new products with desirable characteristics such as disease and drought resistant plants, leaner meat, enhanced flavors, and nutritional quality of foods.

If you find these topics interesting, then you should come and learn about this exciting field of applied science called Food Biotechnology in this fun-filled summer course.

This camp is for students entering 9th - 12th grade.

July 20-24 (PM only), 1:00 - 4:00 PM | Cost: \$125 (register for both AM/PM for \$200)

Harrisburg University | 326 Market Street, Harrisburg, PA
Instructor | Jackie Maddox

Combat Robots

Do you love the show BattleBots? Have you ever wanted to design, build, and compete with your own remote controlled fighting robot?

If yes, then this camp is for you! With close supervision by Katapult Makerspace and Harrisburg University of Science and Technology instructors, campers will learn advanced skills in prototyping, electronics, engineering, and physics as they prepare their robot for a live remote control battle. Students will be custom fabricating an Ant weight combat robot with a transmitter using our 3D prints, laser cutter, and other machines at the Katapult Makerspace. The goal is that students will use the same components to build their robots, however each student will have the ability to customize the body of their robot. Students will create their own t-shirts and take-home their robot after the battle on the final day. Students are required to bring a device that fits the following criteria. Laptops and tablets must be able to run Chrome or Safari. Laptops must have a minimum of 4 GB of RAM and an I3 core, and must be able to run Windows 7 or above for PC or MacOS 10.6 Snow Leopard or above for Mac. Both Apple and Samsung tablets are permitted if from a recent generation, however no Kindles will be allowed. iPads operating system must be within the last 3 iOS updates and Samsung tablets must be within the last 2 OS updates.

This camp is for students entering 9th - 12th grade.

July 20-24, 9:00 AM - 4:00 PM | Cost: \$250

Katapult Makerspace | 17 S. Baltimore St., Dillsburg, PA
Instructor | Katapult Staff



Raspberry Pi

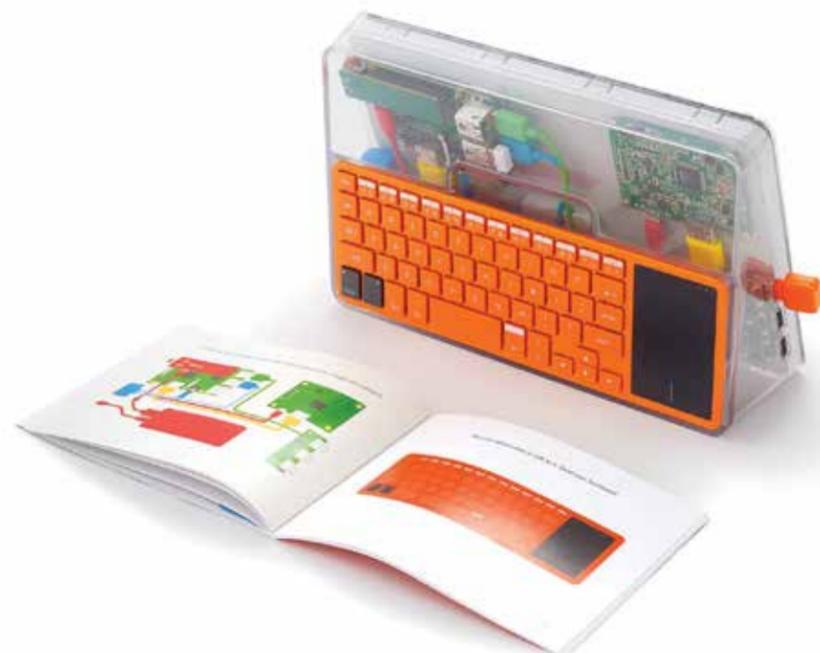
In the Raspberry Pi Camp, students will engage in computer science topics utilizing the power of programming. The Raspberry Pi Computer platform will enable the students to learn how to manipulate aspects of a favorite video game called Minecraft through the use of introductory programming techniques. The best aspect of the camp is students will completely construct their own Raspberry Pi computer to bring home. Through these activities, students will learn an introduction to computer science and Python programming language to use with their new RPi Computer. The students will build and program their own Kano Complete Computer Kit.

Students will leave this camp with their own PC that they have worked on during the camp. PC INCLUDED in the price of the camp.

This camp is for students entering 9th - 12th grade.

July 20-24, 9:00 AM - 4:00 PM | Cost: \$350

Harrisburg University | 326 Market Street, Harrisburg, PA
Instructor | Victoria Brame



STEM Exploration Camp

Summer STEM camps provide students with an opportunity to experience the fascinating world of science, technology, engineering and mathematics (STEM). Summer programs provide a fun way to explore unfamiliar subjects—potentially discovering new areas of interest. For students already interested in STEM, these camps build on existing interests or knowledge. Experiences such as these effectively encourage and inspire the next generation of STEM professionals. Even if your student decides upon a different career path, providing him/her with the opportunity to sample from the STEM smorgasbord is an invaluable experience.

This camp is for students entering 9th - 12th grade.

July 20-24, 9:00 AM - 4:00 PM | Cost: \$150

Harrisburg University | 326 Market Street, Harrisburg, PA
Instructor | Rachel Fogle

Animation and 3D Modeling

This weeklong hands-on camp will introduce students to tools and techniques used in 3-D polygonal modeling. Participants will use Maya, an industry standard, to explore creativity by modeling and animating objects, characters, and environments. This program is geared for students interested in careers ranging from architecture, to video games, to product design, to CGI films.

This camp is for students entering 9th - 12th grade.

July 20-24, 9:00 AM - 4:00 PM | Cost: \$175

Harrisburg University | 326 Market Street, Harrisburg, PA
Instructor | Shane Jeffers

Aquaponics

Aquaponics is a method of growing plants hydroponically by using waste water from aquaculture as the source of nutrients. The Steelton-Highspire Aquaponics Greenhouse will serve as a living laboratory where students will explore biology, plant propagation, water chemistry, engineering design, and agricultural technology opportunities. In addition, students will spend a full day at HU to learn the importance of water chemistry and tour the new Aquaponics Lab located within the Student Union at the Whitaker Center.

This camp is for students entering 9th - 12th grade.

July 20-24, 9:00 AM - 4:00 PM | Cost: \$150

**Harrisburg University Greenhouse at Steelton Highspire High School,
250 Reynders Avenue, Steelton, PA**

Instructor | Mylik Jupiter



Coding Corner

Learn to program with the Edison and Sphero Robots at the North Museum. In this camp, students will be introduced to logic-based thinking concepts while developing programming skills to interact with the Edison and Sphero Robots. Unlike on-screen only coding, the robots will let students see their program working. The Edison robot is a powerful, engaging tool for teaching kids STEM, computational thinking and computer programming in a hands-on way. Sphero is a robotic ball that you control by touching and tilting your tablet. You can drive the robot around, play tabletop games with it, or hold it to use it as a gaming controller. Through the activities in the camp, students will be introduced the concepts of programming movement and will allow visual, tactile and active learners flourish in a STEM environment.

This camp is for students entering 3rd - 5th grade.

July 27-31 (PM only), 1:00 PM - 4:00 PM | Cost: \$150

**North Museum of Nature and Science | 400 College Avenue, Lancaster, PA
Instructor | TBD**



Applied Engineering Camp

Designing and building are essential component to engineering. Engineers follow the steps of the design process to help them create the best possible solutions to real-world problems. These challenges may be simple or complex and the wide variety of solutions can also cover a range of effort for the user. This week-long exploration into the design process will allow students to explore many challenges presented to them. The challenges will include a Bridge Building Challenge, the Rube Goldberg Challenge, Things that Move Challenge and a CO² Dragster Challenge and Competition.

This camp is for students entering 9th - 12th grade.

July 27-31, 9:00 AM - 4:00 PM | Cost: \$150

Harrisburg University | 326 Market Street, Harrisburg, PA
Instructor | Chip Shearrow

Advanced LEGO® Robotics

In this camp, you will design, engineer, build and program a LEGO robot as part of a team. We will explore what is motion design. We will explore how sensors work and how to program the algorithms that use them. You will learn what is involved with wireless Bluetooth control protocols, simple machines, gears and load ratios. Then we will explore Vuforia, cutting edge camera recognition software for advance sensory input and the Microsoft Hololens, holographic computer and head-mounted display. All cool stuff.

This camp is for students entering 6th - 8th grade.

July 27-31, 9:00 AM - 4:00 PM | Cost: \$175

Harrisburg University | 326 Market Street, Harrisburg, PA
Instructor | Glenn Williams

Cyber Security

During the HU cybersecurity summer camp, the students learn how to monitor networks and identify vulnerabilities that can lead to intrusions or cyberattacks and then review the consequences of the attacks. The student has the opportunity for hands-on labs with hardware, application security, networks, and network architecture. The summer camp exposes the student to the definitions and goals of cyber security, aspects of cyber security, threats, vulnerabilities, risk, network policies and standards, and online safety. This is complimented by the students using open-source software tools like “Wireshark” and “Nmap” to analyze packet transmissions and map networks. Another underlying objective of the program is to teach students ethical behavior in cyberspace. Students will need to bring their own laptops that can connect to the internet.

This camp is for students entering 9th - 12th grade.

July 27-31, 9:00 AM - 4:00 PM | Cost: \$150

Harrisburg University | 326 Market Street, Harrisburg, PA
Instructor | Bruce Young



Raspberry Pi

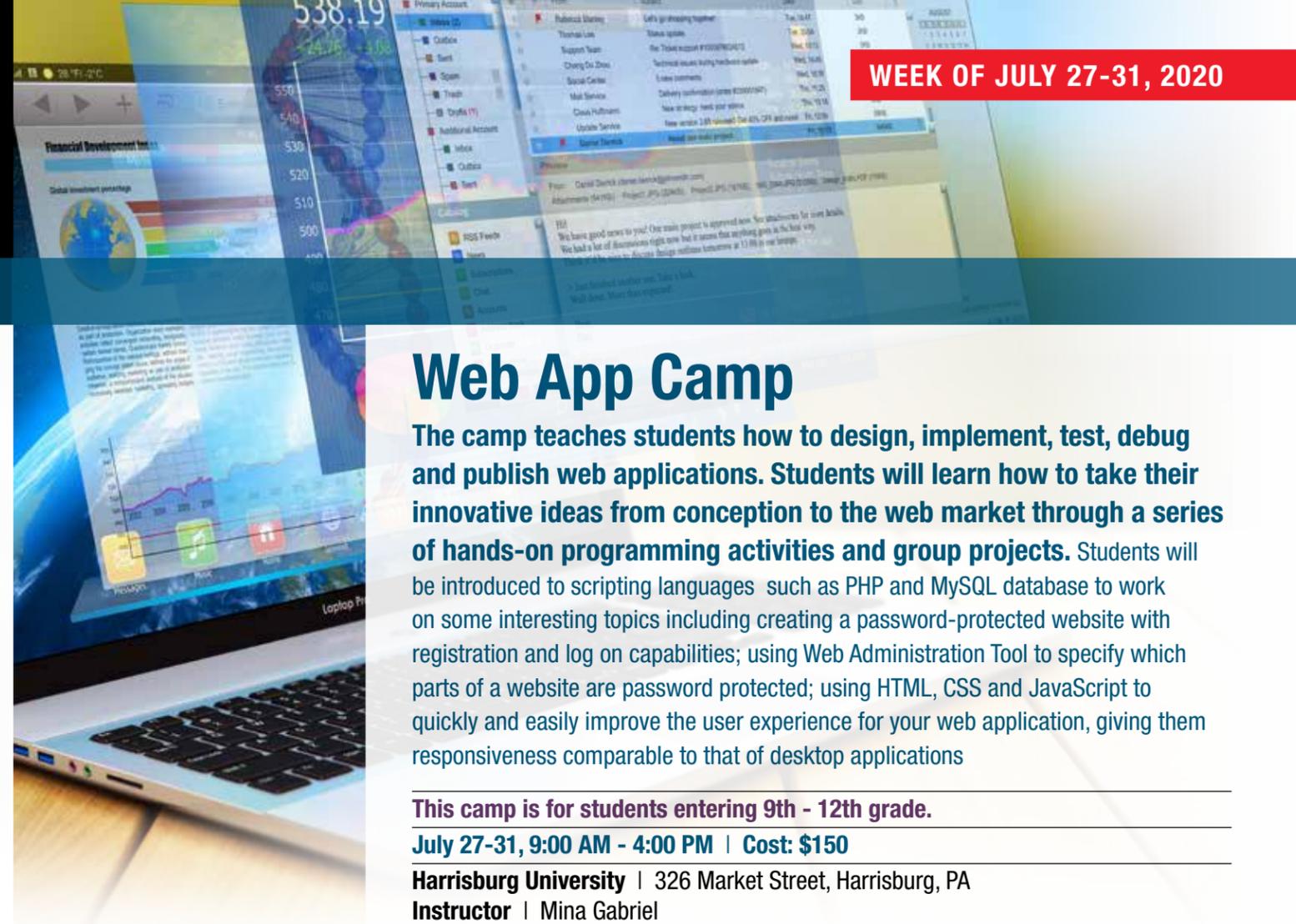
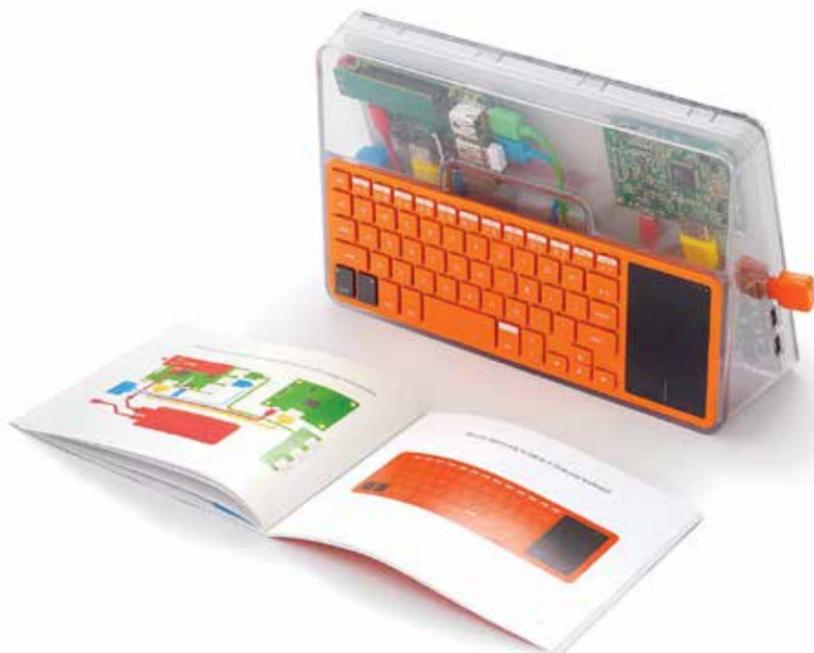
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The students will build and program their own Kano Complete Computer Kit. At the end of the week each student will take their computer home with them.

This camp is for students entering 9th - 12th grade.

July 27-31, 9:00 AM - 4:00 PM | Cost: \$350

Harrisburg University | 326 Market Street, Harrisburg, PA
Instructor | Victoria Brame



Web App Camp

The camp teaches students how to design, implement, test, debug and publish web applications. Students will learn how to take their innovative ideas from conception to the web market through a series of hands-on programming activities and group projects. Students will be introduced to scripting languages such as PHP and MySQL database to work on some interesting topics including creating a password-protected website with registration and log on capabilities; using Web Administration Tool to specify which parts of a website are password protected; using HTML, CSS and JavaScript to quickly and easily improve the user experience for your web application, giving them responsiveness comparable to that of desktop applications

This camp is for students entering 9th - 12th grade.

July 27-31, 9:00 AM - 4:00 PM | Cost: \$150

Harrisburg University | 326 Market Street, Harrisburg, PA
Instructor | Mina Gabriel

Advanced Raspberry Pi

In the Raspberry Pi Camp, students will engage in computer science topics utilizing the power of programming. The Raspberry Pi Computer platform will enable the students to learn how to use physical computing techniques while building a vision-controlled car using a Raspberry Pi. The best aspect of the camp is students will completely construct their own Raspberry Pi computer powered RC car to bring home from scratch. Through these activities, students will learn an introduction to computer science and Python programming language to use with their new RPi controlled race car.

This camp is for students entering 9th - 12th grade.

August 3-7, 9:00 AM - 4:00 PM | Cost: \$300

Harrisburg University | 326 Market Street, Harrisburg, PA
Instructor | Jonathan Korn

Raspberry Pi

In the Raspberry Pi Camp, students will engage in computer science topics utilizing the power of programming. The Raspberry Pi Computer platform will enable the students to learn how to manipulate aspects of a favorite video game called Minecraft through the use of introductory programming techniques. The best aspect of the camp is students will completely construct their own Raspberry Pi computer to bring home. Through these activities, students will learn an introduction to computer science and Python programming language to use with their new RPi Computer.

The students will build and program their own Kano Complete Computer Kit. At the end of the week each student will take their computer home with them.

This camp is for students entering 9th - 12th grade.

August 3-7, 9:00 AM - 4:00 PM | Cost: \$350

Harrisburg University | 326 Market Street, Harrisburg, PA
Instructor | Victoria Brame

How Quantum Computing Will Change the World

Students will explore quantum computers and how they will change the way that science and business answers hard questions in the future. Students will be introduced to scripting languages such as PHP and MySQL database to work on some interesting topics including creating a password-protected website with registration and log on capabilities; using Web Administration Tool to specify which parts of a website are password protected; using HTML, CSS and JavaScript to quickly and easily improve the user experience for your web application, giving them responsiveness comparable to that of desktop applications

This camp is for students entering 9th - 12th grade.

August 3-7, 9:00 AM - 4:00 PM | Cost: \$150

Harrisburg University | 326 Market Street, Harrisburg, PA
Instructors | Terrill Frantz and Thomas Plunkett

Streaming Camp

Ever wonder how much time and effort goes into the production of creating a livestream? Well here at Harrisburg University we are offering for the first time ever, a live-streaming camp. In this camp students will learn about the basic of live streaming. From the social media platforms that enabled it, to understanding the importance of the analytics behind it. Campers will also be taught how to use OBS Studio, one of the biggest well known live-streaming programs that many streamers use today to stream their content to the world. After attending this camp, students will be confident in using the skills they have learned at Harrisburg University towards potentially starting their own live streaming production in the future. Students will take home the equipment that was used during the camp for their continued use at home, included in the price of the camp.

This camp is for students entering 9th - 12th grade.

August 3-7, 9:00 AM - 4:00 PM | Cost: \$300

Harrisburg University | 326 Market Street, Harrisburg, PA
Instructor | Stephen Gayle

Shark Tank for Young Entrepreneurs

Attendees of this camp, **Aspiring Entrepreneurs**, will pitch a promotional idea to a panel of mock investors, much like the TV show "Shark Tank", but without the real money. This camp will be 5 days in length: Day 1) Develop an idea, Day 2) Create a storyboard for a pitch, Day 3) Plan the sales pitch, Day 4) Shoot the 3-minute video, Day 5) Make your pitch! The panel will award investments to the most inspiring videos. Coaching, video equipment, and other resources will be available to attendees. The camp is intended to enhance communication skills, planning skills, and understanding of marketing and sales, as well as provide hands-on experience needed for starting a new private business.

This camp is for students entering 9th - 12th grade.

August 3-7, 9:00 AM - 4:00 PM | Cost: \$150

Harrisburg University | 326 Market Street, Harrisburg, PA
Instructors | Stephen Penn and Pavlo Buryi



Typical Day in the Residence Camp

Residential Camp

High School students may choose to stay at the Harrisburg University of Science and Technology Campus during the week(s) they are attending camps. The cost for adding a residential stay is \$700 per week to include housing, food, and activities. Activities can include movie nights, game nights, trips to City Island and other social activities on campus. Student drop off is the Sunday before camp between 3:00pm – 5:00pm. Student pick up is Friday evening between 4:00pm – 7:00pm or Saturday between 10:00am – 12:00pm. Parents/guardians must submit a copy/photo of their Photo ID in the online application and must bring the same photo ID to check the student out of camp. Students will be housed in Residence on Market (ROM) which is directly across the street from campus. Resident Assistants (RA) will be on duty from 4:00 PM until the next morning.

This camp is for students entering 9th - 12th grade.

Cost: \$700

Harrisburg University | 326 Market Street, Harrisburg, PA

Coordinator | Nayeem Islam

Associate Director of Student Life

NIslam@HarrisburgU.edu

Breakfast | 8:00 AM – 8:45 AM

Breakfast will be provided in the lodging. RA's will bring students to campus where the Camp Coordinators will meet them.

Lunch | 12:00 PM – 1:00 PM

Lunch on Campus with Camp Coordinators.

Dinner | 5:00 PM – 6:00 PM

Student Services and RA's will coordinate dinner and evening activities.

For any questions related to residential stays please contact:

Nayeem Islam

Associate Director of Student Life

NIslam@HarrisburgU.edu

Shani Schalles

STEM Programs Coordinator

SSchalles@HarrisburgU.edu

STUDY ON A **HIGH TECH** CAMPUS

Harrisburg University's 16-story, \$73 million state-of-the-art Academic Center opened in 2009 offering 371,000 square feet of high tech classroom space, scientific teaching labs, seminar rooms, and a surround sound-equipped auditorium. It is a fully wireless campus with a three-dimensional printer, new-media design labs complete with video and audio production capabilities, cameras, and a green screen.

It's the kind of campus that facilitates the highest level of learning in the fields of science and technology.

Harrisburg University Your Gateway to a Great Career

It's your time. Time for your passion and dreams to turn into reality.

Harrisburg University opens the door to unleash your passion for science and technology and to channel your drive for knowledge and a career that will have an impact in a constantly changing world.

A four-year, private, comprehensive university located in the heart of the thriving Harrisburg downtown community, Harrisburg University prepares you for an exciting career in the fields that are shaping society. You can earn a degree in computer and information sciences, cyber security, forensics, biotechnology, or geospatial technology, gain practical experience through quality internships, and be completely hands-on in research projects.

Harrisburg University offers a total college experience, an educational adventure that makes your learning and future success the priority. A Harrisburg University education is a perfect fit for a world thirsting for new.

For advanced. For better. For you.

For more information visit www.HarrisburgU.edu for more information.

REGISTER NOW!!

For more information and to register, visit:
<https://camps.HarrisburgU.edu/>

Registration closes seven days prior to the start of camp.

For information on the camps contact:

Shani Schalles
SSchalles@HarrisburgU.edu
717.901.5100 Ext. 1740