2017

SUMMER EXPLORATION CAMPS

- Summer Game Academy
- Drone Camp
- Web App Camp
- Bioinformatics Camp
- Mathematics Camp
- LEGO® Robotics Camp
- Forensic Science Camp
- Exploring Nanobiotechnology Camp
- Food Biotechnology Camp
- Medical Biotechnologies Camp

HARRISBURG UNIVERSITY
OF SCIENCE AND TECHNOLOGY

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.

326 Market Street
Harrisburg, PA 17101

www.HarrisburgU.edu

2017 SUMMER EXPLORATION CAMPS

Do you like to fix things, make things, or understand how things work by taking them apart? Wouldn't it be great if you could earn college credit while having fun exploring your passion? If you're in high school, the Summer Exploration Camps are the perfect opportunity to earn college credit and have fun.

Let your **imagination** run wild with the potential inventions, technologies, or scientific issues you can explore.

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'll be surprised how much fun you can have letting your imagination run wild with the potential inventions, technologies, or scientific issues you can explore. Plus many of these non-residential camps allow you to earn college credits.

These camps are for incoming high school students through high school seniors. All the camps are day camps. Registration for these camps closes 30 days prior to the start of each camp.

Summer Game Academy

Don't just play games, create them! The Summer Game Academy is an intensive summer program designed to introduce passionate young game designers and developers to the methods and processes used by professional game makers throughout the world. The program focuses on all aspects of the creative process from ideation to problem-solving to delivery. Students will develop skills and strategies to prepare them for a future in the digital media industry.

Students who are entering, attending, or just graduating high school wishing to expand their artistic or programming skills should attend this unique program. The Summer Game Academy is an immersive experience designed for high school students interested in video games, interactive simulations, new media, and/or the digital arts.

Harrisburg University | 326 Market Street, Harrisburg, PA
Instructor | Anthony Ortega

IMED 051-01 | Summer Game Academy
June 19-30, 2017, 9:00 AM- 5:00 PM | Cost: $299 (non-credit day camp)

IMED 051-02 | Summer Game Academy II
July 10-14, 2017, 9:00 AM- 5:00 PM | Cost: $299 (non-credit day camp)

Philadelphia | Location TBD
IMED 051-03 | Summer Game Academy
TBD | Cost: $299 (non-credit day camp)

Drone Camp! Exploring Geospatial Technology

Interested in learning to fly Drones? Have you ever wondered how drones can be used in agriculture, or how you could use this exciting technology in college? This program involves hands on training on 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.

Harrisburg University | 326 Market Street, Harrisburg, PA
Instructors | Albert Sarvis and Sarah Fuhrmeister

GSTC 101-01 | Drone Camp I - Exploring Geospatial Technology
July 10-14, 2017, 8:00 AM - 12:00 PM | Cost: $99 (two-credit day camp)

GSTC 102-01 | Drone Camp II - Advanced Exploration of Geospatial Technology

Drone Camp II will extend the skills developed in Drone Camp I through the use of more advanced GIS, GPS and Remote Sensing tools. The focus of this camp will be on completing an applied project where multiple tools and techniques are to solve a specific problem. This group project focuses on the use of near-infrared drone imagery for analyzing agricultural crop health.

July 17- 21, 2017, 8:00 AM - 12:00 PM | Cost: $99 (one-credit day camp)*

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 the ASP.NET and web application development 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 ASP.NET to quickly and easily improve the user experience for your web application, giving them responsiveness comparable to that of desktop applications.

CISC 051-01

Harrisburg University | 326 Market Street, Harrisburg, PA
Instructors | **Dr. Majid Shaalan, Mina Gabriel and Chad Chu**
June 26-30, 2017, 9:00 AM - 5:00 PM | **Cost: $125** (non-credit day camp)

Bioinformatics Camp

The bioinformatics camp is designed to introduce the topics, and current issues in bioinformatics, as well as help students to gain the skills necessary to the discipline bioinformatics.

The camp is designed for high school students who want an introduction to the language of molecular biology and to the computational aspects in the field of biology. The camp introduces the computer programming and algorithm development to solve problems in biology including, gaining an understanding of the software tools used in labs, research techniques using molecular biology methods, survey of algorithms and methods in bioinformatics and computational biology.

Students will gain familiarity with computational methods in order to address problems in molecular biology, and become knowledgeable about the storage, retrieval, sharing and use of biological data, information, and tools.

CISC 052-01

Harrisburg University | 326 Market Street, Harrisburg, PA
Instructors | **Dr. Majid Shaalan, Mina Gabriel and Chad Chu**
July 24-28, 2017; 9:00 AM - 5:00 PM | **Cost: $125** (non-credit day camp)

Rediscovering Math with Python

Rediscovering Mathematics camp addresses the question of how best to teach and study mathematics.

The camp attempts to bring the exciting and dynamic world of mathematics to high school students. With so much focus today on how best to educate the new generation and make mathematics less repetitous and more interactive, this camp is an eye-opening experience for many students who suffered with dull math teachers and curricula.

Rediscovering Mathematics is an eclectic collection of mathematical topics and puzzles aimed at talented youngsters who want to expand their view of mathematics. By focusing on problem solving, and discouraging rote memorization, the camp shows how to learn and teach mathematics through investigation, experimentation, and discovery.

CISC 053-01

Harrisburg University | 326 Market Street, Harrisburg, PA
Instructors | **Dr. Majid Shaalan, Mina Gabriel and Chad Chu**
July 31- August 4, 2017, 9:00 AM - 5:00 PM | **Cost: $125** (non-credit day camp)

LEGO® Robotics I: Exploring Lego Robotics

It's fun to build solar powered, LEGO robotic machines. It's also challenging.

In this camp, you will design, engineer, build and program a LEGO robot. You will work as part of a team. The LEGO robotics kit will provide us with the blueprints, sensors and parts that we need. You will design, engineer and wire the solar power plant. You will learn what is involved with solar powered systems.

- **Design, engineer and build a LEGO robot.**
- **Design, engineer and wire its solar power.**
- **Design, model and 3D print its solar frame.**

CISC 101-01

Harrisburg University | 326 Market Street, Harrisburg, PA
Instructor | **Glenn Williams**
July 17-21, 2017, 9:00 AM- 5:00 PM | **Cost: $175** (two-credit day camp)

Advanced LEGO® Robotics: Motion, Sensors and Visualization

In this camp, you will design, engineer, build and program a LEGO robot. You will work as part of a team. The LEGO robotics kit will provide us with the blueprints, sensors and parts we need to explore. We will explore what is motion design and how to program our Lego robotic machine to use it. We will explore how sensors work and how to program the algorithms that use them. We will also explore Vuforia, an Augmented Software Development Kit to enable the creation of Augmented Reality Applications.

CISC 102-01

Harrisburg University | 326 Market Street, Harrisburg, PA
Instructor | **Glenn Williams**
July 31 - August 4, 2017, 9:00 AM- 5:00 PM | **Cost: $175** (two-credit day camp)

Forensic Science

Ever watch CSI and think this is a field that interests you?

Are you interested in about science applied to law?
This camp will introduce students to different subfields of forensic science through interactive labs, guest speakers, and discussions with current students and faculty. Interactive labs will be comprised of identifying insects at a crime scene using forensic entomology; identifying skeletal remains using forensic anthropology; analyzing evidence in the laboratory (serology, toxicology, etc.); processing the crime through the analysis of a crime scene and comparative sciences (fingerprinting, ballistics, etc.); and interrogating suspects to identify those responsible of the crime.

This non-credit camp will introduce students in grades 9 – 12 different subfields of forensic science through interactive labs, guest speakers, and discussions with current students and faculty. Interactive labs will be comprised of identifying insects at a crime scene using forensic entomology; identifying skeletal remains using forensic anthropology; analyzing evidence in the laboratory (serology, toxicology, etc.); processing the crime through the analysis of a crime scene and comparative sciences (fingerprinting, ballistics, etc.); and interrogating suspects to identify those responsible of the crime. 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.

FORS 050-01

Harrisburg University | 326 Market Street, Harrisburg, PA
Instructor | **Dr. Robert Furey**
July 17-21, 2017, 9:00 - 5:00 PM | **Cost: $125** (non-credit day camp)

Exploring Nanobiotechnology

Ever wondered how a Gecko can walk upside down?

Ever wonder what magic keeps water off of the Lotus leaves? Do these mind-boggling facts interest you?

If you answered **"Yes!"** then Nanobiotechnology Explorations is here for you this summer!

This is an introductory course to nanobiotechnology, which is the use of existing elements of natural systems to develop new technologies. The concepts of how nano-structures are characterized are defined and a review is conducted of the applications of new technology. Includes active learning experiences.

BTEC 102-01

Harrisburg University | 326 Market Street, Harrisburg, PA
Instructor | **Dr. Leena Pattarkine**
June 19-23, 2017, 9:00 AM - 12:00 PM | **Cost: $99** (one-credit day camp)

Special Topics in Biotechnology
Farm to Fork: The Secrets of 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.

BTEC 104-01

Harrisburg University | 326 Market Street, Harrisburg, PA
Instructor | **Dr. Leena Pattarkine**

August 14-18, 2017, 9:00 AM - 12:00 PM | **Cost: $99** (one-credit day camp)

Special Topics in Biotechnology
Emerging Medical Biotechnologies

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.

BTEC 104-03

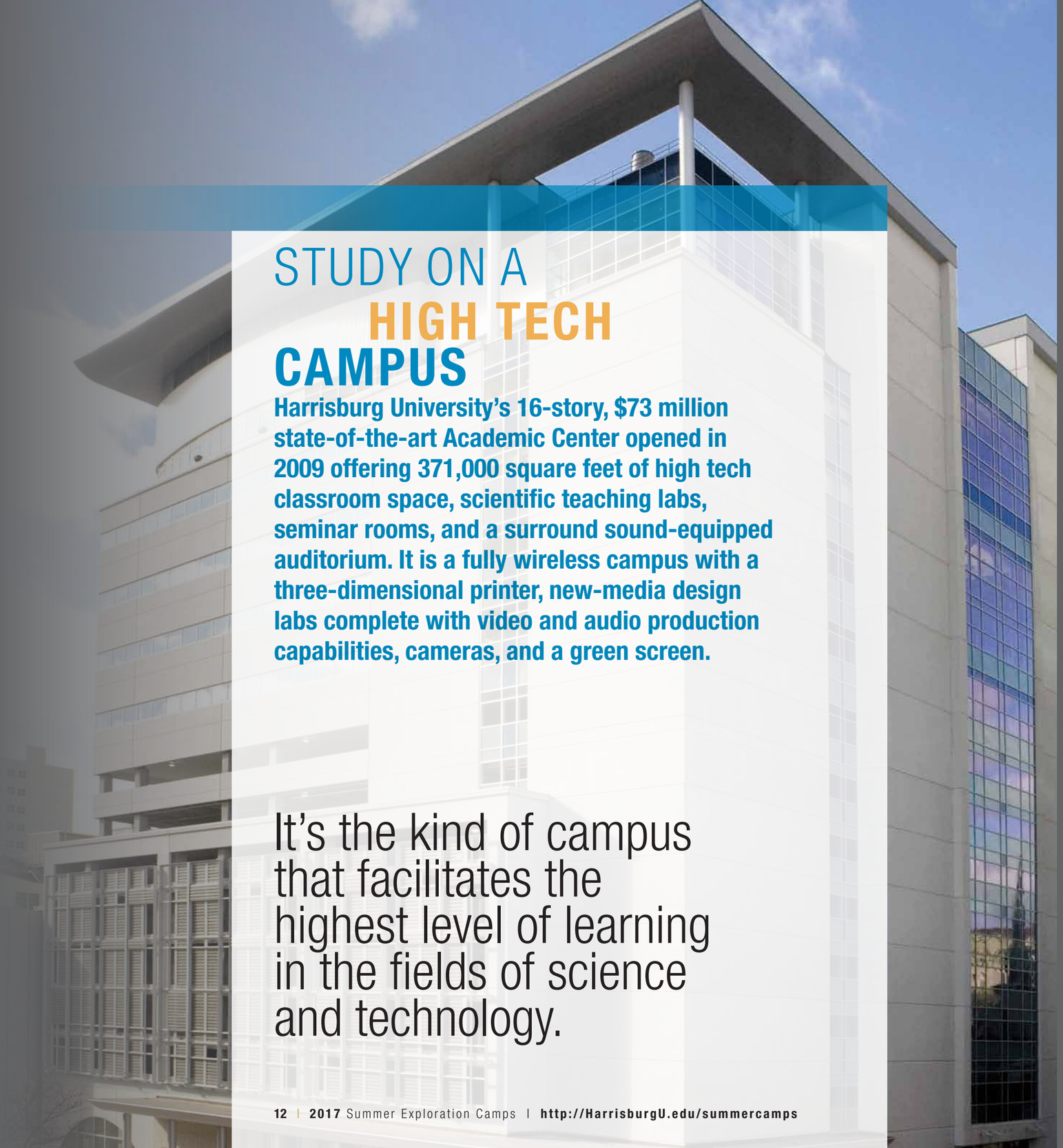
Harrisburg University | 326 Market Street, Harrisburg, PA
Instructor | **Dr. Leena Pattarkine**

June 12-16, 2017, 9:00 AM- 12:00 PM | **Cost: $99** (one-credit day camp)

BTEC 104-02

Harrisburg Academy | 10 Erford Road, Wormleysburg, PA
Instructor | **Dr. Leena Pattarkine**

August 7-11, 2017, 9:00 AM- 12:00 PM | **Cost: $99** (one-credit day camp)



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.

If non-virtual is your style, call us at 1.717.901.5101. We'd be happy to give you a tour of campus and show you all the reasons a Harrisburg University education may be right for you.

REGISTER NOW!!

For more information and to register, visit:
http://HarrisburgU.edu/summercamps

Registration closes 30 days prior to the start of camp.

For information on the camps or to sign up to receive updates, email
Connect@HarrisburgU.edu