

Carolina Master Scholars ADVENTURE SERIES

2019

Get a **JUMPSTART** at USC

discover.sc.edu/youth



JUNE 9-14

ADVENTURES IN VEX ROBOTICS Rising 6-9 graders

Learn how robots think, sense and function and then design and build one using the Vex™ Robotics Design System. Gain insight about the history of robots, how they are used now and how they will be used in the future. Learn about engineering concepts, electronics, sensors and control subsystems from an instructor at USC's College of Engineering. Explore the different engineering disciplines and find out what it takes to be an engineer. If you have an interest in robots and are wondering if engineering might be in your future, then this class is for you! Round out your adventure in a robot demonstration by competing against other robot teams. No experience in robots is necessary.

ADVENTURES IN GRAPHIC / DIGITAL DESIGN Rising 6-9 graders

Have you ever wondered how they made the logo for the Gamecocks, University of South Carolina or your favorite company? Create original graphic design with edge and impact using the industry standard tools in the Adobe Creative Suite. Develop images, typography and logos for posters, movies, games and album art. Gain knowledge and skills in digital design while studying color, composition and presentation. An expert from USC will teach you how to design and transform your ideas into a finished portfolio of your projects.

ADVENTURES IN FORENSIC SCIENCE Rising 6-9 graders

You have seen criminal investigation shows, now try your hand at sleuthing the elements of a crime scene by working with real-life crime scene investigators and law enforcement officers to help restore justice. Through hands-on opportunities and demonstrations, you will learn about latent fingerprints, bloodstain interpretation, footwear impressions, crime scene diagrams and trace and DNA evidence collection. End your adventure on a team investigation of a mock crime scene and create your own crime scene diagram!

ADVENTURES IN LAW AND CRIME Rising 6-9 graders

Spend your day in court — as an attorney! Learn about the court system, criminal investigation, defense and prosecution and evidentiary and trial prosecution. Work with real-life attorneys and law enforcement officers, tackling a real case from the moment the crime is perpetrated. Your team will even bring a case to court through a mock trial. Visit local and supreme courts and see the legal system from the inside!

JUNE 16-21

ADVENTURES IN AEROSPACE Rising 9-12 graders

Have you ever wondered what it takes to be an aerospace engineer? Spend the week with us, and you will learn about the research, design, development and manufacture of aircraft. Discover new innovations in the USC McNAIR Center for Aerospace Innovation and Research, and then head over to the Challenger Learning Center of Richland School District One to learn about rocketry. See the future of 3D printing technologies and learn the basics of composite materials, computer aided design and manufacturing, program industrial-scale robots and test manufactured products. End your week by creating your very own composite aerospace part!

ADVENTURES IN FORENSIC SCIENCE Rising 9-12 graders

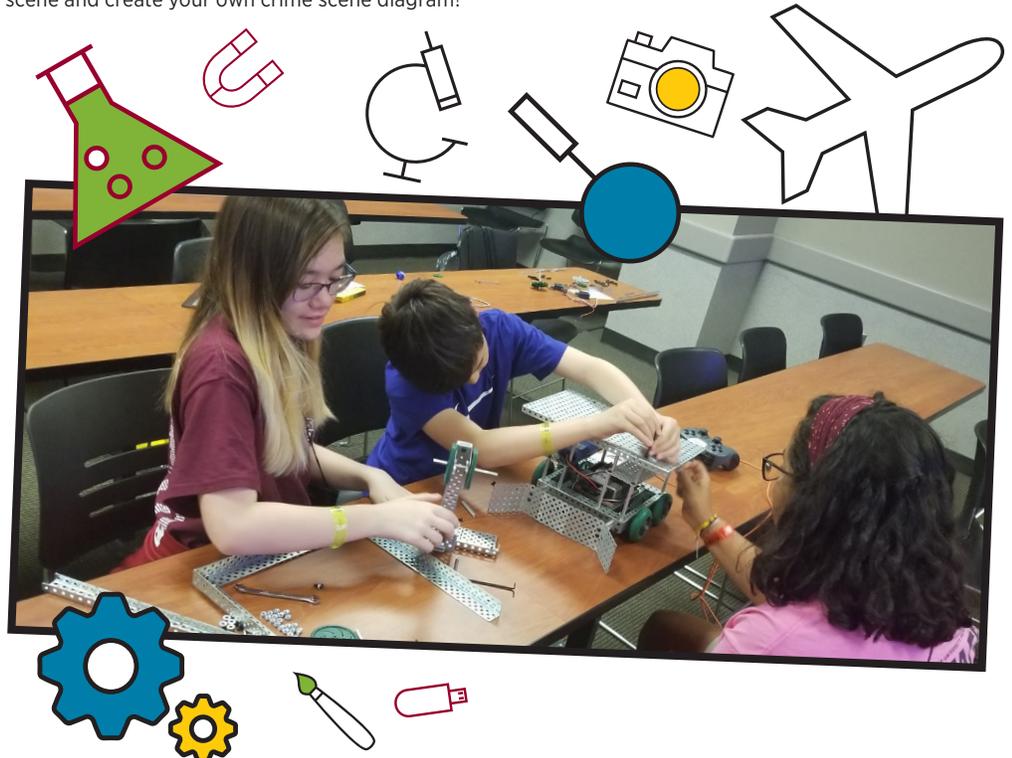
You have seen criminal investigation shows, now try your hand at sleuthing the elements of a crime scene by working with real-life crime scene investigators and law enforcement officers to help restore justice. Through hands-on opportunities and demonstrations, you will learn about latent fingerprints, bloodstain interpretation, footwear impressions, crime scene diagrams and trace and DNA evidence collection. End your adventure by working on a team to investigate a mock crime scene and create your own crime scene diagram!

ADVENTURES IN PHARMACY Rising 9-12 graders

Discover what it takes to become a pharmacist! Pharmacists work in communities, for educational institutions, drug manufacturers and hospitals, and with nuclear medicine to build patient records and medical files. Real-life pharmacists from the College of Pharmacy will teach you how to read prescriptions, help prepare medications, counsel patients, understand poison warnings and learn patient drug regimens. Study hypertension and diabetic monitoring and intravenous techniques. You'll experience the pharmacy lab at USC's School of Pharmacy where you may even try your hand at compounding and making different types of medicine.

ADVENTURES IN 3D PRINTING Rising 9-12 graders

Have you wondered if you can engineer your imagination to life? Explore your love of creating with 3D printing. Join us in this summer camp to start your 3D printing journey and become a "Print-ineer" for life. Experience diverse facets of engineering design from architecture to structural to aerospace to automotive, and learn about their structural design. At the end of the adventure, you will have the opportunity to create 3D-printed engineered structures and enjoy a team "building" project.



JUNE 23-28

ADVENTURES IN BUSINESS - ENTREPRENEURSHIP
Rising 9-12 graders

Have you ever dreamed about creating and launching your own project and pitching it like a contestant on the popular TV show "Shark Tank"? Enhance your entrepreneurial skills in this dynamic business-oriented adventure run through the Darla Moore School of Business. Faculty at the Faber Entrepreneurship Center at USC will teach you how to find a product or service that solves a problem, identify a clearly defined market, uncover a clear advantage and learn what is takes to bring a product or service to the market. Discover how your project will be profitable and learn how to pitch your product to investors. You'll learn to create a business plan, find your market and promote your business. Along the way, you'll build your leadership skills and enhance your innovative thinking. By the end of the week, you will work in a group to create your own product and pitch it like you see on "Shark Tank"!

ADVENTURES IN MEDICINE - ULTRASOUND
Rising 9-12 graders

Journey into the body in real time to watch the heart beat! Ultrasound uses sound waves to generate images of the inner workings of the body. This non-invasive method allows emergency medicine docs to make quick, lifesaving decisions as well as helps orthopedists determine where to inject an inflamed joint. Using a handheld ultrasound probe and an ultrasound unit the size of a laptop, you will learn to scan the body in the same labs and with the same doctors as our students at the University of South Carolina School of Medicine. Practice on our real-life simulator as well as real patients! You will learn some anatomy and physiology along the way, too. Welcome to the stethoscope of the future, ultrasound.

ADVENTURES IN ANIMATRONICS DIORAMA
Rising 6-9 graders

Unleash your Renaissance nature, and combine the artist and the engineer in you! In this camp, you will draw, paint, mold and craft as an artist PLUS you will design, test and build as an engineer. The combination of mixed media and electromechanical armatures will provide you with a creative outlet that overlaps with technology. First used by Walt Disney, this overlap is known as "animatronics." Within the backdrop of a diorama, animatronics can elevate a scene to life-like realism. Bring your own diorama to life with animatronics, perhaps inspired by a favorite book, historical event, nature, modern life, space or the underseas. Throughout the week of creating, you'll receive instruction showing how different craft techniques are used and how servos and actuators are interfaced. Assistance will be provided with the goal of creating a quality animatronic diorama that you will keep that would even marvel Leonardo di Vinci.



JULY 7-12

ADVENTURES IN ENGINEERING
Rising 9-12 graders

Do you think you have the "knack" to be a future engineer but are not sure which area you want to specialize in? Here, you will experience different types of engineering and find out what engineers really do in mechanical, electrical, civil, chemical and biomedical engineering to gain a clearer picture of what it means to earn a degree in one of these fields. Your adventure will include hands-on activities and building sessions in university labs in each area of engineering so you can personally experience how each field is unique and fascinating. This experience will help you decide which area of engineering you want to pursue.

ADVENTURES IN CREATIVE WRITING
Rising 9-12 graders

Develop your writing skills, discover new techniques and polish your prose in your chosen genre. Visit the local art museum to release creativity in your writing and expand your imagination. Work with distinguished and published faculty from the USC Poetry Initiative and the English department to employ a variety of styles and themes to write essays, fiction, poetry and short stories. Take home your work in a small class anthology.

ADVENTURES IN EXTRAORDINARY CHEMISTRY FOR EXTRAORDINARY LIVES
Rising 9-12 graders

As a budding chemist, try out hands-on experiments that will help you connect real-world situations with science. Have you ever wondered about the cosmetics, food and medicine you use? This adventure will help you uncover the science — and chemistry — behind those and many more. Practice concepts from chemistry, the science that investigates the very small, to understand the large. An expert in USC's Department of Chemistry and Biochemistry will show you that a sparkle of imagination has created a constellation of essential, amazing products. Using various techniques and equipment, discover how chemistry is touched by and used in our everyday lives. Study career fields and what it takes to be a chemist.

ADVENTURES IN COMPUTER GAMING
Rising 9-12 graders

Venture into the exciting, interactive world of computer gaming! Using a game engine, you'll learn the skills behind graphics, modeling, animation, multi-level game design, artificial intelligence and basic programming techniques, such as if/switch, for/while loop and more. Through instruction by USC's Computer Science department and hands-on programming, you will work in a group to create a finished product: your own video game.

JULY 14-19

ADVENTURES IN INFORMATION TECHNOLOGY
Rising 9-12 graders

Dive into engineering and computing using the Arduino microcontroller. This STEM+C camp will feed your interest in learning to code and understand the basics of electrical engineering. Join the Information Technology Department in the College of Engineering and Computing who will help you design your own electrical circuits and sensors, and learn about programming them using the Arduino IDE, a simplified version of C++. You'll learn how to control lights, motors and speakers and how to make your Arduino sense its environment. Applying everything you've learned, you'll end your adventure by making your own project to solve an everyday problem.

ADVENTURES IN BOOK ART
Rising 6-9 graders

Books are tools for recording and transmitting ideas, information, images and stories. Students will explore diverse techniques, materials and processes and apply their learning by constructing their own unique handmade books. They will examine the works of book artists, studying ideas and materials that are important to the contemporary practice of handmade books. The students will produce their own book covers and pages by designing paste papers and using gelli printing and tie-dye processes. Prompts will be used to inspire creative writing both in and outside of the book. The adventure will start with simple books and progress to more complex book-binding techniques. Book designs will include pamphlet, accordion, pop-up and Coptic stitch.

ADVENTURES IN EXTRAORDINARY CHEMISTRY FOR EXTRAORDINARY LIVES
Rising 6-9 graders

As a budding chemist, try out hands-on experiments that will help you connect real-world situations with science. Have you ever wondered about the cosmetics, food and medicine you use? This adventure will help you uncover the science — and chemistry — behind those and many more. Practice concepts from chemistry, the science that investigates the very small, to understand the large. An expert in USC's Department of Chemistry and Biochemistry will show you that a sparkle of imagination has created a constellation of essential, amazing products. Using various techniques and equipment, discover how chemistry is touched by and used in our everyday lives. Study career fields and what it takes to be a chemist.

ADVENTURES IN COMPUTER GAMING
Rising 6-9 graders

Venture into the exciting, interactive world of computer gaming! Using a game engine, you'll learn the skills behind graphics, modeling, animation, multi-level game design, artificial intelligence and basic programming techniques, such as if/switch, for/while loop and more. Through instruction by USC's Computer Science department and hands-on programming, you will work in a group to create a finished product: your own video game.



JOIN US!

Visit us online for registration and program information.
discover.sc.edu/youth
803-777-9444
pups@mailbox.sc.edu



UNIVERSITY OF
SOUTH CAROLINA