Introduction to Data Science (Grades 9-12)
This introduction to data science is an innovative introduction to core concepts of computer programming and statistics and their application in real-world data analysis. Data Science is built on three interrelated perspectives: inferential thinking, computational thinking, and real-world relevance. Inferential thinking refers to an ability to connect data to underlying phenomena and to the ability to think critically about the conclusions that are drawn from data analysis. Computational thinking refers to the ability to conceive of the abstractions and processes that allow inferential procedures to be embodied in computer programs. In addition to exposure to computer programming and statistical inference in the context of data analysis, the week will involve hands-on analysis of a variety of real-world datasets, and it will touch on social and legal issues surrounding data analysis.

Fundamentals of CyberSecurity (Grades 6-12)
According to a study into computer security manpower challenges and potential solutions released by the Center for Strategic and International Studies (CSIS), “we not only have a shortage of the highly technically skilled people required to operate and support systems already deployed, but also an even more desperate shortage of people who can design secure systems, write safe computer code, and create the ever more sophisticated tools needed to prevent, detect, mitigate, and reconstitute from damage due to system failures and malicious acts.” Northrop Grumman cyber experts will teach Computer Forensics, CyberSecurity fundamentals, and provide invaluable information on CyberSecurity Internships & Careers. The week-long program will culminate with a CyberSecurity Grand Challenge Competition between two student teams. The program encourages both students who are beginners and students who have an intermediate knowledge of CyberSecurity.

Advanced CyberSecurity Concept/Techniques (Grades 6-12)
Are you ready to take your CyberSecurity skills to the next level? This course is intended for students who have a solid foundation in the fundamentals of CyberSecurity, and will include extensive hands-on lab time. Northrop Grumman cyber experts will lead this course and help students improve their skills and prepare them for the CyberPatriot competitions this fall. Enrollment priority will be given to students who have participated in at least one CyberPatriot season and intend to compete in the 2015-2016 season.
Choose Your Hands-on Learning Experience from these Seven Exciting Tracks

• Clean Energy Technologies (Middle School)
• Introduction to Data Science (High School)
• Fundamentals of Cyber Security (Combined)
• Advanced Cyber Security Concepts/Techniques (High School)
• Programming with Arduinos (Middle School)
• Programming Games in Python (High School)

Breakfasts & lunches included with registration fee. Space is limited to 25 per class. Registration closes June 30th.

Programming with Arduinos (Grades 6-9)

Students will learn the basics of circuits, electricity, engineering and computing using Arduino. Some of the tools we will use are the Processing programming language, the SparkFun Inventor's Kit for Arduino, the LilyPad e-textiles line and the SparkFun RedBot robotics platform. This STEM track is designed to give a basic foundation to start working in a heavily relevant programming and engineering setting.

Programming Games in Python (Grades 9-12)

Are you thinking about a career in Software Engineering? Did you know that Software Engineering was rated number one for job satisfaction in a Wall Street Journal article of the 10 Best Jobs of 2012? In this course, you will be introduced to the fundamentals of computer programming which will allow you to get a feel for what it would be like to be a Software Engineer. Some common applications for computer programming include:

• Computer Games
• Analysis of Integrated-circuit simulation results.
• Medical Software
• Anti-Virus Software
• Real-Time Physical Simulations
• High performance image processing/AI software
• High performance aerial and mobile sensor processing

Online registration is required and will be open from April 1st thru June 30th at

https://conferencereg.colostate.edu/NorthropGrummanSTEM2017

Needs based scholarships are available
Classes are limited to 25 students, submit your registration as early as possible.