

Summer Science Programs for HS Students

A long list of summer research programs can be found at <http://people.rit.edu/gtfsbi/Symp/highschool.htm>

Alabama Programs

Discovery Hall Programs
Dauphin Island Sea Lab
Box 369-370, Dauphin Island, AL 36528
Contact: Denise Keaton, (334)861-2141

Four week marine science summer immersion courses for high school students (grades 10-12).

Arizona Programs

Embry Riddle Aeronautical University <http://prescott.erau.edu/degrees/programs/camps/>

Flight Exploration

You can get your first real flight experience in this extensive introduction to the aviation industry. Participants receive ground training in our campus facilities, fly in our Cessna 172 Simulators, and pilot a Cessna 172S aircraft. All flight training is conducted by certified university flight instructors. Open to high school students ages 14-18 who are U.S. Citizens.

Aviation Discovery Camp

This three day program will give students ages 12-15 a look at the many careers available in the world of aviation. Your experience will end with a flight in a Cessna 172! Open to students ages 12-15, no citizenship requirements.

Aerospace Engineering

Learn how aerospace engineers make the most spectacular aircraft and space craft work. Our Aero Track focuses on concepts inside our atmosphere such as planes, while our Astro Track will take students outside the atmosphere to focus on satellites, rockets, etc. Each 6-day intensive program is an overview that demonstrates the fundamental concepts of engineering in a fun, hands-on environment. Open to high school students ages 15-18.

Computer/Electrical Engineering

This program consists of specifying, designing, building, flying, and collecting data from a high altitude balloon flight to near outer space. Open to high school students ages 16-18 with a strong background in math and science.

Aerial Robotics/UAV

Students will learn in a hands on environment about how aerial robots work mechanically and gain an understanding of the control theory behind them.

Students will build, control, and fly their own robot and compete against their peers in a culminating challenge. Open to high school students, ages 15-18 who are U.S. Citizens.

Global Security and Intelligence 'Spy' Camp

This summer immerse yourself in the world of security and intelligence with this week long program. Participants will develop surveillance skills while using tools of the trade as well as explore the practice of cryptology and the art of illusion. In this unique experience you become the spy catcher! Open to high school students ages 15-18 who are U.S. Citizens.

California Programs

Birch Aquarium at Scripps Institution of Oceanography, UCSD
9500 Gilman Dr. UCSD-0207, La Jolla, CA 92093-0207

Contact: Liz Hadridge (619) 534-7523

Summer Learning Adventures for K-12 students: One day to one week classes in the field and in the lab; on marine science and other ocean topics.

Internships are available as Instructor Aides working with aquarium instructors.

Summer Oceanology Program

Occidental College, Los Angeles, CA 90041

Contact: Dr. G. Martin, Dept. of Biology

Program for high school seniors. Intro to marine biology (five week course).

Summer Science Program www.summerscience.org

6 week astronomy program for juniors & seniors

The Summer Science Program (SSP) is a residential enrichment program in which gifted high school students complete a challenging, hands-on research project in celestial mechanics. There is a program in New Mexico and California.

Connecticut Programs

Mystic Aquarium and University of Connecticut

Contact: (860)572-5955 ext. 204

Seminar on Marine Mammals is an introduction to marine mammals and current research
Coastal Ecology includes a week-long study cruise aboard a schooner.

University of Connecticut

Explore Engineering E²

<http://www.engr.uconn.edu/engineering2000.php>

E² is a one-week residential summer program for current high school juniors and seniors. During this exciting week at the Storrs Campus, participants explore engineering careers by working in small groups with faculty and college students to learn what various engineers do in the workplace; learn and demonstrate engineering concepts and during the evenings YESS Program (6-8 pm Monday - Wednesday) students focus on a single engineering discipline by fabricating a discipline specific device. The week wraps up with demonstrations of items the students created during the week. Eligibility: Must be a current sophomore or junior in High School.

University of Connecticut School of Medicine

<http://medicine.uchc.edu/prospective/hcop/hssrap.html>

The High School Student Research Apprentice Program is a six week summer program for high school students who have completed their junior or senior year and have indicated an interest in medicine, dental medicine or biomedical research.

Florida Programs

University of South Florida

<http://uc.usf.edu/stem>

The STEM education center at USF offers a challenging educational summer program for gifted high school students entering grades 11 and 12. It is designed for students who wish to expand their horizons and explore the fields of science, engineering, medicine, mathematics, and technological inventions and innovations.

Illinois Programs

University of Illinois Urbana-Champaign

Girls' Adventures in Math, Engineering, and Science

<http://go.illinois.edu/games>

G.A.M.E.S is an annual week long camp, designed to give academically talented high school aged girls an opportunity to explore exciting engineering and scientific fields through demonstrations, classroom presentations, hands-on activities, and contacts with women in these technical fields.

Worldwide Youth in Science and Engineering

<https://wiki.engr.illinois.edu/display/wyse/WYSE+Summer+Camps>

Exploring Your Options is a week-long residential program that introduces high school rising juniors and seniors to the field of engineering. Participants will

interact with engineering students and faculty members, plan and build a project, and engage in hands-on activities prepared by departments within the College of Engineering.

Discover Engineering is a one-week residential camp for rising sophomores who are interested in math and science. Students will work on several projects that will incorporate different aspects of engineering.

Illinois Aerospace Institute

<http://www.ae.illinois.edu/IAI/>

The Illinois Aerospace Institute summer camp is a one-week residential program for students entering grades 9-12 who are interested in learning about the fields of aerospace engineering and aviation.

Indiana Programs

Indiana University School of Medicine

<http://web.indstate.edu/thcme/precollege/precollege.html>

Maine Programs

The Jackson Laboratory Summer Student Program

<http://www.jax.org/education/ssp.html>

An internationally recognized center for mammalian genetic research, The Jackson Laboratory is an independent, nonprofit institution. Here, outstanding students conduct interdisciplinary biomedical research as apprentices in the laboratories of staff scientists. The Laboratory, an NIH designated cancer research center, is located in the coastal Maine community of Bar Harbor, adjacent to Acadia National Park.

Maryland Programs

Johns Hopkins Whiting School of Engineering

<http://engineering.jhu.edu/ei/>

Engineering Innovation is an exciting college-level summer program for motivated high school students with an aptitude in math and science and an interest in (or curiosity about) engineering.

Massachusetts Programs

Massachusetts Institute of Technology's Women's Technology Program

<http://wtp.mit.edu>

The MIT Women's Technology Program (WTP) is a four-week summer academic and residential experience where female high school students explore engineering through hands-on classes, labs, and team-based projects in the summer after 11th grade .

The Research Science Institute sponsored by the Center for Excellence in Education and MIT

<http://www.cee.org/research-science-institute>

Students participate in a rigorous academic program which emphasizes advanced theory and research in mathematics, the sciences, and engineering.

Woods Hole Science Aquarium

<http://aquarium.nefsc.noaa.gov/Volunteers/>

The aquarium has a summer intern program for high school students. Most summers, the interns are in residence 30 hours per week for 4-6 weeks. The interns help care for animals, work on special projects, attend seminars and training sessions, and go on field trips. Interns must have completed 10th, 11th or 12th grade, and must be at least 16 years old when the internship begins.

Michigan Programs

Michigan State University – Physics of Atomic Nuclei Program at NSCL

<http://www.nsl.msui.edu/teachersstudents/programs/pan>

PAN is an outreach program at the National Superconducting Cyclotron Laboratory (NSCL)—one of the world's leading nuclear physics laboratories—located on the campus of Michigan State University.

University of Michigan

Architecture Program

<http://taubmancollege.umich.edu/architecture/programs/highschool/>

ArcStart is a pre-architecture program designed to introduce students to experience the studio intensity of a bachelor of science degree in architecture. The program hosts 18 students as a residential program at U-M's Taubman College of Architecture and Urban Planning in Ann Arbor from July to August. The program is open to U.S. students.

Michigan Math and Science Scholars (MMSS)

<http://www.math.lsa.umich.edu/mmss/>

Offers current high school students the opportunity to explore math and science at the cutting edge of research. Topic areas include Physics, Astronomy, Biology, Chemistry, Geology, Mathematics, and Statistics. Hands-on learning emphasized, with laboratory research, field work and computer laboratories. Fee - financial aid available. Apply early for a better chance at your top choice.

Summer Engineering Academy (SEA)

http://www.umich.edu/summer_prog.php#Anchor-child

An outreach program of Center for Engineering Diversity and Outreach (CEDO) comprising a series of enrichment experiences (June-August) for 7th-11th graders to give exposure to the exciting world of engineering. Programs vary in duration from 2-3 weeks. For more information, contact Lucie Howell lucieh@umich.edu.

Summer Engineering Exploration (SEE) Camp

<http://www.engin.umich.edu/diversity/>

For high school students considering the field of engineering, SEE Camp is a weeklong investigation of the various fields and career possibilities in engineering at the University of Michigan. Participants can interact with admissions and financial aid counselors, engineering students, faculty, and professional engineers. Includes visits to outside locations. **Fee** - scholarships available. Registration required.

New Mexico Programs

Summer Science Program www.summerscience.org

6 week astronomy program for juniors & seniors

The Summer Science Program (SSP) is a residential enrichment program in which gifted high school students complete a challenging, hands-on research project in celestial mechanics. There is a program in New Mexico and California.

New Jersey Programs

New Jersey Association for Biomedical Research

http://www.njabr.org/njsor/summer_fellowship_2005/

Ph: (908) 964-9449

New York Programs

Alfred University Summer Astronomy Institute for high school students

<http://www.alfred.edu/summer/hs.cfm>

email: summerpro@alfred.edu

This exciting residential program is designed for students entering grades 10-12 who love astronomy and want to spend time learning more about this fascinating subject with other students who share their passion.

Columbia University

http://www.bme.columbia.edu/pages/academics/high_school_students/

Columbia University offers a pre-college program for students entering grades 9–12 who are interested in intensive summer study. The program covers all areas of academic study, including a course hosted by the Department of Biomedical Engineering.

The summer program Biomedical Engineering: Physical Effects on Cells offers an introduction to the multidisciplinary field of biomedical engineering and the application of engineering principles to solving problems in biology, physiology,

and medicine. Students will attend formal lectures and participate in hands-on lab activities on within the BME Department on the Columbia University Morningside Campus.

Cornell University

<http://bti.cornell.edu/pgrp>

Every summer Cornell runs an NSF funded internship program for High School sophomores and juniors to study different aspects of plant biology in a real laboratory setting. The HS program is 6 to 8 weeks.

Introduction to Architecture

<http://www.sce.cornell.edu/sc/programs/index.php?v=111&s=Overview>

If you're contemplating a career in architecture, or if you'd simply like to indulge your passion for it, then this intensive program is for you. You'll spend the mornings exploring architectural principles such as: Composition, History, Preservation, Landscape architecture, Planning, and Urban design. In addition, you'll delve into the nuts and bolts of architecture, including: Building construction, Structures, Acoustics, Lighting, Energy conservation, and Sustainability.

Cornell Engineering Experience

<http://www.sce.cornell.edu/sc/programs/index.php?v=105&s=Overview>

In the Cornell Engineering Experience, you'll learn from faculty experts about some of the latest developments in research and technology. You'll get the chance to see what engineers really do, how they solve problems, and some of the specialty areas in which they work, such as: mechanical, aerospace, structural, transportation, and civil engineering, electrical engineering, material science, and engineering physics, chemical, biological, biomedical, and environmental engineering, computer science, operations research, and information engineering, earth science and many interdisciplinary topics such as energy.

You'll gain hands-on experience during weekly laboratories and participate in group projects created to familiarize you with the engineering design process. The projects and labs are fun and will challenge your creative abilities. You'll also have the opportunity to visit several cutting-edge facilities, such as Cornell's Nanofabrication Facility, the Center for High Energy Synchrotron Source (CHESS), the Nanobiotechnology Center, the co-generation power plant, or the lake-source cooling plant.

In addition to enrolling in the Exploration in Engineering Seminar, you will select two additional courses from the more than sixty on this Web site.

To be eligible for this program, you must currently be a junior or senior.

Hamilton College

The STEP/Dreyfus program provides funding for about 10 first-year students to Hamilton to spend five weeks in their pre-freshman summer working directly with Hamilton faculty doing summer research in biochemistry, chemistry, chemical physics, neuroscience and physics.

Hofstra University

<http://www.hofstra.edu/Academics/Colleges/HCLAS/SSE/index.html>

Hofstra University's Summer Science Research Program offers high school students opportunities in science research under the guidance of professionals in science and mathematics. **HUSSRP** provides selected research-oriented high school students the opportunity to work with our science faculty during the summer in an on campus research program. The program culminates in a science "poster session" in early Fall where students display the work they performed during the summer. For an additional fee, SSRP students have the opportunity to live on campus, and to participate in some of the activities offered as part of our Pre-College Program, including an SAT preparation and college search seminar and extra- and co-curricular cultural and recreation activities.

New York City Research Initiative – Sponsored by NASA

<http://education.gsfc.nasa.gov/nycri/>

Summer Research Institute Component - Teams of high school and undergraduate students and faculty work along side graduate students and the principal investigators (lead scientists) of NASA funded research projects at universities within a 50-mile radius of New York City (NY, NJ and CT); or at the Goddard Institute for Space Studies (GISS) under the mentorship of a GISS scientist. Summer enrichment experiences include content and research seminars, team oral research reports, visits to various research laboratories and informal education institutions, participation in local and national research summits and a final research summit with participants from other government agencies, such as the National Science Foundation (NSF), National Oceanic and Atmospheric Administration (NOAA), the United States Department of Education (USDE) and the United States Department of Defense (DoD).

NYU Polytechnic

INTRODUCTION TO CS AND CYBER SECURITY SUMMER PROGRAM
FOR HIGH SCHOOL WOMEN

<http://engineering.nyu.edu/events/2014/07/07/introduction-cs-and-cyber-security-summer-program-high-school-women>

Rensselaer Polytechnic Institute

Aerospace Engineering Summer Career Exploration Program

<http://summer.rpi.edu/update.do?artcenterkey=31>

This one week residential enrichment program on the campus of Rensselaer Polytechnic Institute in Troy, New York will introduce students to a career in aerospace engineering by taking a close look at how objects fly using model airplanes. In addition to designing and building a model airplane, participants will observe wind tunnel and flight tests. The Aerospace Engineering Summer Exploration Program is open to high school students entering 10th, 11th, and 12th grade in the fall.

Architecture Career Discovery Program

<http://summer.rpi.edu/update.do>

This two week residential enrichment program will include morning programs and introductory lectures in history and theory of architecture, computing and simulation, freehand and extreme drawing, building ecologies and design.

Chemistry and Medicine Summer Scholars Program

<http://summer.rpi.edu/update.do?artcenterkey=112>

This two week residential enrichment program will show how chemistry plays a central role in discovering new medicine. During this hands-on program students will solve problems mainly on organic chemistry related to the synthesis of medicine, will synthesize and purify a medicinal chemical (e.g. aspirin) under the supervision of Rensselaer faculty members and college teaching assistants, will analyze synthesized samples using chemical instruments, and give a presentation on what they had learned about the role of chemistry in medicine.

Computer Game Development Academy

<http://summer.rpi.edu/update.do?artcenterkey=19>

Each two week residential enrichment academy is intended to teach high school students the fundamentals of the video game creation process. Artists and programmers will take separate classes that speak to their particular skill sets, and then interdisciplinary teams will be formed for the remainder of the academy.

Rockefeller University <http://www.rockefeller.edu/outreach/>

Rockefeller Science Outreach Program

The Program is designed to help you maximize your research experience. It will help you accomplish two goals; 1) to have a practical, laboratory experience working with your mentor to gain insight into how and why scientific research is done, and 2) to document your experience by communicating your work in a Poster Session and Research Report. Your scientific work is not complete unless it has been communicated such that your audience can understand it.

Roswell Park Cancer Institute in Buffalo, NY

http://www.roswellpark.org/Education/Summer_Programs/SummerResearchProgramforHighSchoolStudents

Roswell Park Cancer Institute (RPCI) offers summer research experiences to students at different levels of their academic development. During a typical

summer, 25 high school students participate in programs designed to give them an opportunity to learn and become active participants in cancer research. This is a competitive program designed for talented high school students throughout the USA, who will have just completed their junior year.

SUNY Oneonta Biological Field Station at Cooperstown

<http://www.oneonta.edu/academics/biofld/INTERN/internships.htm>

Research at the Biological Field Station (BFS) is sponsored by the local community, various governmental and private agencies and the BFS itself. Most of the work is used in decision making regarding the management and protection of our local resources. Research teams made up of faculty, staff, selected graduate and undergraduate college students, and high school students focus on specific areas of concern such as water quality monitoring, fisheries management, biological control studies and surveys. High School internships last 9 weeks - for five days per week. Students participating in each internship are responsible for organizing, executing and submitting for publication, a module of work which may require the support of other team members.

SUNY Stony Brook <http://www.stonybrook.edu/sb/highschool.shtml>

Here is a list of the different programs

Engineering Summer Camp - Introduce motivated high school students to the various fields in engineering.

<http://www.stonybrook.edu/cesame/students/EngineeringCamp/engsummercamp.shtml>

Biotechnology Summer Camp

<http://www.stonybrook.edu/cesame/students/BiotechSummerCamp/biotechsummercamp.shtml>

Our goal in this program is to introduce motivated high school students to the techniques used in modern biotechnology research. The students will begin by learning concepts and techniques as a class but will quickly move to working in small groups or with a partner.

[Science And Research Awareness Series \(SARAS\)](http://anes.anesthes.sunysb.edu/teaching/sas.html)

<http://anes.anesthes.sunysb.edu/teaching/sas.html>

SARAS is a program organized by Stony Brook University faculty and staff to present lectures, workshops and demonstrations about biomedical science to High School and undergraduate students.

[Simons Summer Research Fellowship](http://www.stonybrook.edu/commcms/simons/index.html)

<http://www.stonybrook.edu/commcms/simons/index.html>

The Simons Summer Research Program gives academically talented,

motivated high school students who are between their junior & senior years the opportunity to engage in hands-on research in science, math or engineering at Stony Brook University. Simons Fellows work with distinguished faculty mentors, learn laboratory techniques and tools, become part of active research teams, and experience life at a research university.

[Oceanography at Stony Brook South Hampton](#)

http://somas.stonybrook.edu/education/undergrad_course_mar104

Students will examine the World Ocean and the chemical, geological, and physical processes that control its major features and the life that inhabits it, as well as explore human interactions with the marine environment. This intensive course is specifically designed for motivated high school students wishing to earn college credit, but current undergraduates can also enroll. The short-term course will run for 2 weeks and meet for 4-5 hours each weekday. Content will be delivered via lectures, in- class activities, and 2 boat trips in which students will explore nearby coastal habitats using oceanographic sampling equipment. Students must have completed high school biology and be at least 16 years old.

North Carolina Programs

National Institute of Environmental Health Sciences

<http://www.niehs.nih.gov/summers/>

The Division of Intramural Research (DIR) established the Summers of Discovery Program for which internships are given to *outstanding* high school, college undergraduate and graduate students interested in pursuing careers in the biomedical/biological sciences.

Pennsylvania Programs

University of Pennsylvania Summer Science Academy

<http://www.sas.upenn.edu/lps/highschool>

Penn Summer Biomedical Research Academy

The four-week, non-credit Biomedical Research Program immerses you in some of the most cutting-edge areas of biomedical research, including cardiovascular disease, oncology, immunology, and neuroscience.

Penn Summer Forensic Science Academy

Forensic science is one of the fastest growing careers in science today. Covering everything from fingerprints and DNA matching to ballistics and blood-spatter analysis, recent advances in forensic science have transformed basic police investigative work as well as the conduct of the judicial system.

Penn Summer Physics Academy

Have you ever taken a ride on a rollercoaster and wondered how many Gs your body experienced at the bottom of the big drop? If so, the four-week, non-credit Physics Academy is for you.

Management and Technology Summer Program

<http://www.upenn.edu/fisher/summer/>

The Management & Technology Summer Institute (M&TSI) is a for-credit summer program for rising high school seniors and a select few rising high school juniors who want to learn about the integration of technological concepts and management principles. M&TSI features classes taught by leading faculty and successful entrepreneurs, field trips to companies and R&D facilities, intensive team projects, as well as other activities designed to give students the opportunity to learn about the principles and practice of technological innovation. This is a three-week for-credit program.

Tennessee Programs

Vanderbilt University

Summer Engineering, Science, and Technology for high school students

PAVE program

<https://pave.vanderbilt.edu/ayindex.php>

PAVE is a six-week summer course of study designed to strengthen the academic skills of students who are planning to enter a college engineering, pre-medical, science, or technology program.

Texas Programs

Baylor University <http://www.baylor.edu/summerscience/index.php>

The purpose of the High School Summer Science Research Program (HSSSRP), an annual program established in 1991, is to give superior high school students hands-on research experience by working on research projects with Baylor University science professors in many disciplines. The research program occurs during the University's first session of summer school and is open to students the summer between their junior and senior year of high school.

Washington Programs

University of Washington

<http://www.depts.washington.edu/genomics>

The Genomics Outreach for Minorities (GenOM) Project provides educational and research opportunities for underrepresented minority students interested in genomics. These programs target pre-college and undergraduate students.

Ambitious in scope, the project includes the following activities:

Israel Programs

Technion – Sci Tech Summer Science Camp

http://www.noar.technion.ac.il/newsite/index.php?option=com_content&view=article&id=228&Itemid=197

SciTech is a 3-4 week program which combines scientific research along with cultural and social activities. It brings together outstanding students from North and South America, Europe, Asia, Israel and many other countries and is intended to challenge even the brightest students.

Weizmann Institute of Science

<http://davidson.weizmann.ac.il/en/content/general-information-2013>

The International Summer Science Institute is open to talented science-oriented students who have just graduated from high school prior to the starting date.

Three and a half weeks are devoted to the laboratory scientific research. During that period supplemental lectures delivered by senior Institute scientists, departmental talks and visits to some of the state of the art facilities on campus take place. Students themselves are strongly encouraged to prepare and lead seminars on subjects in which they have interest.

Programs with many locations throughout the United States

NASA Education Program - Summer High School Apprenticeship Research Program (SHARP) - program is temporarily suspended

<http://www.nasasharp.com/>

(If this website isn't working, click <http://education.grc.nasa.gov/LERCIP1.htm>)

SHARP is a research based mentoring program that is designed for students who excel in science, mathematics, technology, engineering, and geography (SMTEG). The program operates during the summer months at participating NASA Field Installations and select colleges and universities across the USA. NASA SHARP consists of two components, a commuter component and a residential component.

NIH Summer Internship Program in Biomedical Research

<http://www.training.nih.gov/student/sip/>

Summer programs at the National Institutes of Health (NIH) provide an opportunity to spend a summer working side-by-side with some of the leading scientists in the world, in an environment devoted exclusively to biomedical research. The NIH consists of the new 240-bed Mark O. Hatfield Clinical Research Center and more than 1200 laboratories located on the main campus in Bethesda, MD as well as in Baltimore and Frederick, MD; Research Triangle Park, NC; Phoenix, AZ; Hamilton, MT; and Detroit, MI. Awards cover a minimum of eight weeks, with students generally arriving at the NIH in May or June.

Other Programs

DuPont Challenge Science Essay Awards Program
847 205 3000

Intel Science Talent Search

NYC Science and Engineering Fair

The Young Naturalist Awards

<http://www.amnh.org/education/students/program.php?id=28>

This program is looking for students who can design, implement, and report back on their own scientific expeditions. The Young Naturalist Awards program promotes excellence in science and communication through the recognition of outstanding, expedition-based student writing and art. YNA is a research-based essay contest for students in grades 7-12 to promote participation and communication in science.

New York City Junior Science and Humanities Symposium

Give oral presentations on research

http://www.nyas.org/programs/education_applications.asp

A list of programs which help high school students explore the world of mathematics research, compiled by the AMS.

www.ams.org/employment/mathcamps.html