Dearest Students,

Below is a list of several science/research programs. Over the next month, think about aspects of programs which appeal to you and organize the materials necessary for each application – should you wish to apply. These programs should be about your personal development and interest in science and math. Apply with intent, not as a thing to do to "look good on college applications."

There are clearly more programs and research opportunities for high school students than those listed below. Another powerful search engine that you can use to search for programs is:

www.pathwaystoscience.org

The ones listed below seem to be nationally (and locally) reputable and popular with students. If you find something in your search which appeals to you, please pass the information on to me and I will add it to the list. Note carefully deadlines, application requirements and length of program.

I have included the url which should direct you to the application – you should spend time researching the identity of each program on its website as each is unique. All programs are competitive and will offer you an opportunity to engage and participate in "hands-on" science beyond that of a shadowing experience. If the url fails to work for you, please let me know.

Lastly, I strongly advise that you apply to just one or two programs. Each application is a lengthy process, including what is expected of your teacher (me!) – so your chance of acceptance will be much higher if you and I can focus our energy on preparing an application that speaks to the particular program to which you are applying. In other words, please do not send out an application to 20 programs, just choose 2 or 3 that really capture your interest.

Sincerely,

Your Teacher

Programs in Pittsburgh, PA

Carnegie Mellon College of Engineering Programs K-12 https://engineering.cmu.edu/education/outreach.index.html https://engineering.cmu.edu/education/outreach/programs/index.html
CMU's College of Engineering offers a variety of programs for K-12 students to engage them in STEM. All programs are free. The activities are designed to be interactive and engaging, providing students with high-quality engineering programing opportunities for students to learn about engineering. Students will develop age-appropriate critical thinking, problem-solving, and design skills.
Carnegie Mellon University – Computer Science Curriculum https://academy.cs.cmu.edu
The CMU CS Academy is an online, graphics-based computer science curriculum taught in Python. CMU has the goal of developing a novel, world-class, online, interactive high school computer science curriculum that is entirely free
Spark Saturdays – CMU* Eceoutreach.ece.cmu.edu/spark-Saturdays.html
SPARK Saturdays is a program created by ECE Outreach that aims to introduce middle school and high school students to concepts within the field of electrical and computer engineering and expose them to engineering as a potential career choice. There are typically four labs, held on Carnegie Mellon's campus each semester, ranging from topics like the binary number system and boolean logic to programming in Python to building circuits with LEDs and that can be used as radios.
Pennsylvania Governor's School for the Sciences **deadline: end of January** http://sciences.pa-gov-schools.org/
The Pennsylvania Governor's School for the Sciences (PGSS) was established in order to provide a summer enrichment experience in the sciences and mathematics for talented Pennsylvania high school students and to encourage them to pursue careers in the fields of science, technology, engineering or mathematics.
Summer Academy for Math and Science – Carnegie Mellon University **deadline: February 1st** https://www.cmu.edu/pre-college/acadmic-programs/sams.html
SAMS scholars engage in a rigorous curriculum taught by CMU faculty and staff who are deeply committed to student success. Students will develop a deeper understanding of STEM via traditional classroom instruction, hands-on projects, and interaction with mentors.
UPMC Hillman Cancer Center Academy* **deadline: mid-February** https://hillmanacademy.upmc.com
The Hillman Cancer Center Academy, a 7-week summer program, strives to provide cutting edge research and career preparatory experiences to a diverse group of highly motivated high school students who are pursuing higher education and careers in research and medicine.
Phipps Conservatory High School Summer Programs **deadline: April** https://phipps.conservatory.org/classes-and-programs/for-educators/ecoleader-academy/

Phipps Conservatory and Botanical Gardens offers a six-week paid Learning for a Greener Future internship for highly motivated Pittsburgh-area high school students who come from low-income communities.
Public Health Science Academy (U. Pitt) **deadline: April 1st**
https://www.sph.pitt.edu
The School of Public Health at the University of Pittsburgh offers an intensive four-week summer program for rising 11th and 12th grade students in Pittsburgh. This Academy provides a path forward to a rewarding career in public health and other scientific fields. At the conclusion of the program, students receive a stipend.
Project Seed * **deadline: early April**
https://www.acs.org/education/students/highschool/seed.html
Project SEED is a nationwide program sponsored by the American Chemical Society. The program places high achieving, economically disadvantaged high school students into a laboratory setting for eight weeks during the summer. Students are awarded a stipend and expected to carry out a cutting-edge research project.
Gene Team * **deadline: mid-April**
https://www.biology.pitt.edu/k-12-outreach/gene-team
This 4-week program is looking for a group of scientific-minded high school students from the Pittsburgh area who want to learn more about Biology while developing laboratory skills. The pre-requisite for the program is that you have completed one year of high school Biology. You will be immersed in a current research project from a lab at the University of Pittsburgh.
ACE Mentor Program – Pittsburgh **deadline: end August**
http://www.acementor.org/
ACE is an after school program that introduces you to careers in architecture, construction management, engineering and other disciplines.

Programs in the US & Canada

Center for Precollegiate Education and Training, University of Florida * www.cpet.ufl.edu
The UF SSTP is a seven week residential research program for high school students who have completed their junior year and are considering medicine, math, computer, science, or engineering careers. The program emphasis is research participation with a UF faculty research scientist and his or her research team. ***Note: Application materials will be available mid-December. Completed applications will be reviewed and selected applicants will be invited beginning in February 2021 and accepted until the program is full.***
Summer Science Research Program, Rockefeller University* **deadline: first week January** https://www.rockefeller.edu/outreach/ssrp/
At Rockefeller University's 7-week Summer Science Research Program (SSRP) intellectually curious, highly motivated high school students are matched with Research teams that align with their scientific interests. Students are individually mentored by graduate students, postdoctoral fellows, or lab heads. These mentors volunteer to design and supervise individualized summer projects for their students. Students must be 16 years old at the start of the program in order to participate. There are scholarships for students demonstrating need. The SRP does not provide room and board to its participants. Most of the students come from the New York Metropolitan area; those who don't must secure their own accommodations.
MIT Women's Technology Program **deadline: mid-January** https://web.mit.edu/wtp/
The MIT Women's Technology Program (WTP) is a rigorous 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.
Inspiring Girls Expeditions **deadline: end of January** https://www.inspiringgirls.org
Each summer, tuition-FREE expeditions for high school girls are held in a variety of locations. These treks interweave field science, art, and backcountry travel. A team of 9 teenage girls and 3 instructors spend 12 days exploring and learning about mountain glaciers and the alpine landscape through scientific field studies with professional glaciologists, ecologists, mountain guides, and artists.
Jackson Laboratory Summer Student Program* **deadline: end of January** https://www.jax.org/education-and-learning/high-school-students-and-undergraduates/learn-earn-and-explore/admission
The Summer Student Program is a 10-week summer program designed for students who want to immerse themselves in genetics and genomics research. It emphasizes laboratory discovery, communication of knowledge, and professional growth. ***Students receive a stipend of $6500 including room and board and the cost of round-trip travel between the student's home and the laboratory.***
Joint Science Education Project **deadline: end of January** https://dickey.dartmouth.edu/programs/arctic-environment/institute-arctic-studies/jsep

The Joint Science Education Project (JSEP) is an international collaboration between Greenland, the United States, and Denmark to educate and train the next generation of polar and STEM professionals. This project supports fully funded opportunities for US high school students (rising 12th grade students) to participate in hands-on and inquiry-based polar science activities. The field experiences involve non-negotiable age requirements.		
MITES:Minority Introduction to Science and Engineering, MIT **deadline: February 1st** https://mites.mit.edu/discover-mites/		
Minority Introduction to Engineering and Science (MITES) is a rigorous six-week residential academic enrichment program for rising 12th grade students – many of whom come from underrepresented or underserved communities – who have a strong academic record and are interested in studying and exploring careers in science and engineering. All costs are paid for by the program.		
NASA Internships **deadline: February 1st** https://stemgateway.nasa.gov/public/s/explore-opportunities		
NASA offers a variety of internships and fellowships for high school students.		
California State Summer School for Mathematics and Science* **deadline: early February** https://cosmos-ucop.ucdavis.edu/		
COMOS is a 4-week residential program for talented and motivated high school students. Students work side-by-side with university researchers exploring topics that extend beyond the high school curriculum.		
NIH High School Summer Internship Program* **deadline: mid-February** www.training.nih.gov/research-training/hs/hs-sip/		
Summer programs at the National Institutes of Health (NIH) provide an opportunity to spend a summer working at the NIH side-by-side with some of the leading scientists in the world, in an environment devoted exclusively to biomedical research. It looks like there are a number of programs to which students can apply; they are considered full-time research positions.		
Research Internship in Science and Engineering Program Boston University* deadline: mid-February http://www.bu.edu/summer/high-school-programs/rise-internship-practicum/		
Students focused on the sciences and entering their senior year of high school are invited to join the Research in Science & Engineering (RISE) program and contribute to university-level research projects in science and engineering. RISE provides two research tracks: ***Internship*** *and* ***Practicum***		
Roswell Park Cancer Institute, Summer Research Program* **deadline: mid-February** https://roswellpark.org/education/k-12-undergrad/high-school-summer-research-program		
6-week summer program for rising 12th grade students. Students work on independent research projects, receive classroom instruction on cancer basics, attend seminars by invited speakers and learn about professional development opportunities. At the end of the program, students attend a research conference and present a poster on their research. Room & board is not offered.		
Secondary Student Training Program (SSTP), University of Iowa* **deadline: mid-February** https://belinblank.education.uiowa.edu/students/sstp/		
Students who are currently in grades 10-11 may nominate themselves for the Secondary Student Training Program (SSTP), a five-and-a-half-week residential summer research program at The		

University of Iowa. Students will conduct research in a university research group under the guidance of a faculty mentor. Students will also produce a research poster and paper as a part of the program.
Summer Science Program, New Mexico SU, UNC, Purdue, Indiana, UC Boulder* **deadline: mid-February**
https://summerscience.org
Each summer since 1959, highly gifted and motivated high school students participate in a 6-week immersive experience. This program changes their lives, and the benefits continue for life.
Texas Tech University Clark Scholars Program* **deadline: mid-February**
https://www.depts.ttu.edu/honors/academicsandenrichment/afficiliatedandhighschool/clarks/
This is a 7-week research intensive program for rising and current 12th grade students. The program supports research activities in all disciplines that are available at Texas Tech University. Students receive a stipend of $750 on completion of the program.
National Youth Science Academy **deadline: end of February**
https://www.nysacademy.org/
The NYSA is a four-week session in the mountains of West Virginia where students meet with top-notch scientists and enjoy outdoor adventures. The National Youth Science Camp (a program in the NYSA) is a residential science education program for young STEM enthusiasts the summer after they graduate from high school. Students from around the country (two are selected to represent each state and Washington, D.C.) are challenged academically in exciting lectures and hands-on studies, and have voluntary opportunities to participate in an outdoor adventure program, gain a new and deep appreciation for the great outdoors, and establish friendships that last a lifetime.
High School Honors Science/Engineering/Mathematics Program (HSHSP) * **deadline: March 1st**
https://education.msu.edu/hshsp/
The Michigan State University High School Honors Science/Engineering/Mathematics Program (HSHSP) is a seven-week, intensive summer research program designed for rising 12th grade students from across the United States who wish to gain more experience conducting research while living on the campus of a major research-intensive university.
Program in Mathematics for Young Scientists (PROMYS) **deadline: March 1st**
https://promys.org/programs/promys/for-students/
PROMYS is a six-week summer program at Boston University designed to encourage strongly motivated high school students to explore in depth the creative world of mathematics in a supportive community of peers, counselors, research mathematicians, and visiting scientists.
Canada/USA Mathcamp **deadline: early March**
https://www.mathcamp.org/
Canada/USA Mathcamp is an intensive 5-week-long summer program for mathematically talented high school students, designed to expose these students to the beauty of advanced mathematical ideas and to new ways of thinking.
International Summer School for Young Physicists **deadline: March 31**
https://www2.perimeterinstitute.ca/outreach/students/virtual-issyp

ISSYP is an exciting and challenging two-week program for Canadian and international high school students with a keen interest in theoretical physics who intend to pursue physics at the university level. At present, this is an online program		

International Programs

Dr. Bessie Lawrence International Summer Science Institute; Weizmann Institute, Israel **deadline: March 1st** https://www.weizmann-usa.org/about/education/bessie-f-lawrence-international-summer-science-institute/
During the month-long program, the students spend the first three weeks conducting research in the campus labs. And after three weeks on campus, the group moves to an altogether different scientific focus: a field school in the Judean Desert and the Negev. Expert guides from the Sde-Boker field school lead hikes that acquaint the students with the unique ecological, geographical, geological, zoological, and archaeological characteristics of the area – some of which are one-of-a-kind in the world.

SciTech Technion* **deadline: end of March** https://int.technion.ac.il/programs/scitech/		
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.		