

Summer 2014 Research Opportunities

Dear Parents and Students,

It is time for all research students to begin planning their summer. While summer science research is not mandatory until junior year, it is highly recommended. There are two paths to follow. The first is to procure a local mentor through direct contact. All 10th and 11th grade students have been introduced to this process in research. An information packet entitled "How to Find a Mentor" can be found on the district website under the research department. The second involves applying to national programs. Below is a comprehensive list of opportunities available to our students. POB students have participated in many of these programs. Each program is unique; some are free, some require payment. I have tried to update each program, but double check my details on their websites.

If a program is of interest, you can contact me to discuss it further and to assist in the application writing process. Watch for deadlines!! Mary Lou O'Donnell

modonnell@pobschools.org,

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ADDITIONAL WEBSITES FOR FINDING SCIENCE RESEARCH PROGRAMS

<http://connectamillionminds.com/connectory.php>

<http://www.sciencebuddies.org/>

http://apps.societyforscience.org/science_training_programs/

January and February Deadlines:

Feinstein Institute for Medical Research - Feinstein Institute Student Internship Program

The application process for both the high school and college internship programs has changed from last year. All students who are interested in a research internship during the summer or school year should review research focus areas described on the Feinstein Institute web site and identify the investigator with whom you would like to work. Each investigator web page also gives contact information for the scientist who heads the lab. Contact the scientist directly, provide your resume or school transcript, and apply to them to work in their lab. Students who are accepted will be contacted by Mrs. Emilia Hristis in Feinstein administration in early March to arrange all required paperwork. Please note that the number of positions is very limited, and applications are highly competitive. Last year, less than 1/3 of applicants were able to get a position.

Office of Naval Research Science and Engineering Apprentice Program (SEAP) The Science and Engineering Apprenticeship Program (SEAP) provides an opportunity for students to participate in research at a Department of Navy (DoN) laboratory during the summer. The goals of SEAP are to encourage participating students to pursue science and engineering careers, to further their education via mentoring by laboratory personnel and their participation in research, and to make them aware of DoN Research and technology efforts, which can lead to employment within the DoN. Notes: list of participating labs available online. Stipend of 3150.00 is given but no housing and transportation is provided. They did mention they would assist with this. *Open to all grades.* <http://seap.asee.org/>

Online registration/transcript due: January 6, 2014

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Simons Summer Research Program at Stony Brook University

Simons Fellows are matched with Stony Brook faculty mentors, join a research group or team, and assume responsibility for a project. Simons Fellows attend weekly faculty research talks and participate in special workshops, tours and events. At the closing poster symposium, students are presented with a \$1,000 stipend award. Participants may elect to live on campus with other student researchers or to commute.

Eligibility: Students interested in science who have demonstrated independence, creativity and an aptitude for doing hands-on work are especially encouraged to apply. Applicants must be in their junior year (11th grade) of high school (no exceptions); must be US citizens and/or permanent residents; and must be at least 16 years of age by the start of the program. Preference is given to students who have already acquired a Stony Brook mentor and/or have prior summer research experience.

Dates of Program: June 30 – August 12, 2014

Each high school may nominate a maximum of three students per school. Due January 17th

Research Science Institute (RSI) at MIT– Extremely Competitive!!

Open to juniors with PSAT scores over 76 in math with a combined score of 220

The Research Science Institute (RSI) is an elite opportunity for anyone interested in challenging themselves personally and academically. The RSI is held over the summer at the campus of the MIT in Cambridge. There is no charge for this program. <http://cee.org/research-science-institute>

Due: January 20, 2014

Rockefeller University Summer High School Science Outreach Program - Goal is to engage students with opportunities to do hands-on, mentored, scientific discovery. Two year commitment preferred! Highly Competitive! There is no charge for this seven week program running from 6/25 to 8/10. Students must commute daily. **Open to sophs and juniors.** <http://www.rockefeller.edu/outreach/>

Due: January 21, 2014

Stony Brook University: Garcia Center Summer Scholar Research Program –Students spend the summer performing investigations in bio-chemistry, material science, polymer chemistry and physics. The 8 week research experience involves the cost of materials (\$1100.) Students can reside on campus for an additional cost or can commute. **Open to juniors only** and extremely competitive!!! Average above 95; unweighted, 3 years of honors or AP English, Science and Math. <http://polymer.matscieng.sunysb.edu/researchscholar.htm> 2012. *Last year* due date: February 15, 2013

Texas State University Honors Summer Math Camp – Very successful and competitive! Texas Mathworks is a center for innovation in mathematics education at Texas State University, *San Marcos, TX*. Students advanced in math can apply **following 9th grade**. 2011 Siemens National 5th place team! Web site: <http://www.txstate.edu/mathworks> <http://www.txstate.edu/mathworks/camps/hsmc.html#Eligibility>

Admissions is on a rolling basis, apply asap!! Closes on April 15, 2014

American Museum of Natural History. Students contact AMNH researchers by email requesting summer internships. Researchers available in all sciences but most frequently in astro-physics (a combination of space science and computers), anatomy and physiology and genetics. This summer research experience has no cost but students are responsible for LIRR transportation. See Mrs. O'Donnell immediately if interested. **Open to sophomores and juniors.**

<http://research.amnh.org/astrophysics/staff> astrophysics

<http://rggs.amnh.org/faculty> biological

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Internships at Oneonta Biological Field Station in Cooperstown

A successful candidate must have a strong academic background in environmental or natural sciences. They must be self motivated and willing to work effectively as team members under a variety of environmental conditions. They should be prepared to present PowerPoint updates on their research over the summer. They are expected to summarize their work in a report, to be included in the BFS Annual Report. All these criteria will be considered in the final evaluation of interns. High school intern summer stipend: \$1,500 – 1750. Housing and transportation are not included in these internships. If you would like to inquire about the possibility of staying on the Oneonta campus, you will need to make arrangements with the summer program. **Applicants must be at least 16 years of age.**

F.H.V. Mecklenburg Conservation Fellowships and Village of Cooperstown (Susquehanna River)

Internships: Available to high school students. The purpose of this internship is to monitor water quality in the upper Susquehanna River to assure that the river can safely assimilate effluent from the waste water treatment facility.

<http://www.oneonta.edu/academics/biofld/INTERN/hsinternapp.html> *Applications available in January*

Ross Mathematics Program at Ohio State University: an intensive summer experience designed to encourage motivated pre-college students to explore mathematics. During those eight weeks, students are immersed in a world of mathematical discovery. Ambitious pre-college students with interests in mathematics and science are invited to apply. **First-year students range in age from 14 to 18 years old.** Admission decisions are based on several criteria, including: the applicant's work on some challenging math problems; essays concerning the applicant's interests and goals; teacher recommendations; and school transcripts. Fees for this program are determined by cost of six weeks of room and board. The room and board fee for 2012 will be \$2200 ****very competitive!

Applications for the 2014 session will be available in January.

The Jackson Laboratory, Bar Harbor, Maine

The Laboratory is an NIH-designated cancer research center. Biomedical research open to high school juniors. Early June start date requires discussion with guidance about regents exams.

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

Due: February 2, 2014

Roswell Park Cancer Institute Summer Research Program - Roswell Park Cancer Institute offers summer research experiences to students who *have completed their junior year of high school*. This is a competitive program designed for talented high school students throughout the country. There is no charge for this program, which runs from 6/25 – 8/10, 2012. Housing is provided at a nearby dormitory at approx. 700.00 for the summer. Admitted students must be present for the entire 7-week program.

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

Due: February 3, 2014

March Deadlines:

The Summer Science Program (SSP) in Celestial Mechanics: is a five week residential enrichment program in which 36 rising HS seniors complete a challenging, hands-on research project in celestial mechanics. By day, students learn college-level astronomy, physics, calculus, and programming. By night, working in teams of three, they take a series of telescopic observations of a near-earth asteroid, and write software to convert those observations into a prediction of the asteroid's orbit around the sun. Open to **high school juniors**, at least 15 years old, now taking calculus or pre-calculus. Sophomores may also apply but only *if you are already taking calculus*. SSP takes place on the campus of Westmont College in Santa Barbara, California and The New Mexico Institute of Technology in Socorro. Financial aid is available, complete program costs approximately \$4100. **Application process opens in January and usually closes on March 1.**

<http://www.summerscience.org/home/index.php>

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HOPP Summer Student Research Program at Memorial Sloan Kettering Cancer Center

The Human Oncology and Pathogenesis Program (HOPP) Summer Student Program is designed for high school students who are interested in pursuing careers in the biomedical sciences. If you are a **10th or 11th grade HS** student who is interested in science, our *eight week* summer program offers an opportunity to work in a state-of-the-art laboratory facility and explore the kinds of questions that researchers are asking today.

Students receive a stipend upon completion of the program to offset commuting costs.

<http://www.mskcc.org/research/human-oncology-pathogenesis/hopp-summer-student>

Due: March 2, 2014

The Smith Summer Science and Engineering Program for High School Girls

The Smith Summer Science and Engineering Program (SSEP) is a four-week (7/1 to 7/28) residential program for 100 exceptional young women (**grades 9 – 12**) with strong interests in science, engineering and medicine. Each July, select high school students from across the country and abroad come to Smith College to do hands-on research with Smith faculty in the life and physical sciences and in engineering. Girls who will be in high school (grades 9-12) in fall 2012 are eligible to apply for the summer 2012 program. Fee of \$5000.00 covers all expenses and financial aid is available.

www.smith.edu/summerprograms/ssep/program.php (Due: **March 1, 2014**)

Baylor University, Waco, TX (2010) _ The purpose of this four week High School Summer Science Research Program (HSSSRP), an annual program established in 1991, is to give superior high school **Juniors** hands-on research experience by working on research projects with Baylor University science professors in many disciplines. Fees include room and board approximately \$1400.00 as well as travel to Texas. Financial aid is available. <http://www.baylor.edu/content/services/document.php/128131.pdf>

<http://www.baylor.edu/summerscience/>

Online application not available. **Due March 1, 2014**

NHLBI RESEARCH in Bethesda, Maryland: Summer Internship Program in Biomedical Research

Participants join a research laboratory for a minimum of ten weeks between June and August and conduct research in selected areas of investigation under the guidance of an NHLBI intramural research scientist. High school students should be **at least 16 years of age** prior to June 1. Applications must be submitted online.

While applications may be filed between Nov. 15 and March 1, *early applications are encouraged.*

<https://intramural.nhlbi.nih.gov/Offices/OSD/OE/Pages/SummerProgs.aspx>

Rensselaer Polytechnic Institute (RPI) - An opportunity for a group of four students to spend the summer at RPI near Albany performing material science, environmental, and bio-chemical research in the lab of Plainview resident, Dr. Richard Gross. See Mrs. O'Donnell immediately if interested. Details to follow.

Cornell University, (2011) Research Apprenticeship in Biological Sciences (RABS)

If you're a serious, research-oriented student with a passion for science, this innovative, highly selective program will give you the rare opportunity to join a top-notch laboratory at one of the world's leading research institutions. **Open to juniors only.** The \$10,000.00 program includes 4 – 8 Cornell credits, room and board and all program related expenses. \$65. Application fee.

Biology <http://www.sce.cornell.edu/sc/programs/index.php?v=132&s=Overview>

Due date last year: March 8, 2014

Michigan State: The High School Honors Science/Mathematics/Engineering Program (HSHSP) is a seven-week, intensive summer research program designed for **motivated juniors** from across the United States who wish to gain more experience conducting research. Its goals are not only to educate individuals about the research process but to provide the right kind of social context for such knowledge and expertise to flourish.

Very competitive and successful, apply early! \$3500.00

<https://www.msu.edu/~hshsp/welcome.htm>

Last year the online application was due: **Mar. 15, 2013**

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Brookhaven National Labs: BNL High School Research Program

Dates for the summer 2011 program: July 11 to August 19.

The High School Research Program (HSRP) is an advanced high school program in which students are paired with a BNL scientist. The BNL scientist mentors the student on a research project during a six week summer session. Student must arrange housing/transportation. **Open to juniors. Very competitive**

<http://www.bnl.gov/education/program.asp?q=111>

Last year application due: **March 14, 2014**

April Deadlines:

Mathematics Summer Camp at Stony Brook University: two week residential camp (\$1300.00) for students interested in exploring various fields of Mathematics - **Specifically for current 9th and 10th graders.**

<http://www.stonybrook.edu/cesame/students/MathCamp/mathcamphs.shtml>

Last Year: April 1

Engineering Summer Camp at Stony Brook University: two week residential camp (\$1500.00) for students interested in exploring computer and electrical engineering - **Specifically for current 9th and 10th graders.**

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

Last Year: April 1

Summer Course in Marine Sciences - 3 credits - Stony Brook Southampton, Summer 2014

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. To enroll, visit <http://www.stonybrook.edu/summer/highschool.shtml>. **Enrollment begins April 1, 2014.** Starting April 1, visiting students can sign up for housing at the Stony Brook main campus. Instructions will be posted in the early spring. Estimated costs are ~\$900 for 3 credit, in-state tuition and optional ~\$750 for 13 days of room and board

Boston University Research Internship in Science and Engineering - The Research Internship in Science & Engineering provides academically **motivated juniors** with the opportunity to conduct university-level research in state-of-the-art laboratories, alongside some of the sharpest scientific minds in the country. This six-week honors program provides full immersion in the laboratory environment. Under the guidance of a Boston University research mentor, students work on a new or ongoing research project in a discipline of their interest, gaining valuable technical and analytical skills, as well as insight into the scientific process. **JUNIORS only**

http://www.bu.edu/summer/program_high_school_students/honors/research_internship/

2014 application out 12/15/2013. Last year application due: April 1

Hofstra University Summer Science Research Program : this program gives high school **sophomores and juniors** the opportunity to work with Hofstra University faculty to conduct science and mathematics research. Selection for entrance into this program is selective and is based on high school science experience, a personal interview and the high school teacher's recommendation. The program runs from early July through the middle of August with cost of \$1800.00

www.hofstra.edu/academics/colleges/hclas/sse/sse_program_outline.html

Due: April 11, 2014

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National Heart Lung and Blood Institute: Summer Internship in Biomedical Research

The goal of the Summer Internship Program in Biomedical Research at NHLBI is to expose students to research investigation in a highly enriched environment that is devoted exclusively to biomedical research and training. The Program is **open to high school juniors**. Participants join a research laboratory for a minimum of ten weeks between June and August and conduct research in selected areas of investigation under the guidance of an NHLBI intramural research scientist.

<https://intramural.nhlbi.nih.gov/Offices/OSD/OE/Pages/SummerProgs.aspx>

Rolling registration – online application, complete asap; closes March 1

Cold Spring Harbor DNA Learning Center

Student summer day camps are week-long genetic workshops for students from middle school through 10th grade. Recommended Courses: DNA Science (foundation course) followed by Silencing Genomes

<http://www.dnalc.org/about/>

Brown University: Summer@Brown Some suggested courses for current 9th and 10th grade students include:

CEBI0901: Techniques in DNA-Based Biotechnology

CEBI0937 Laboratory Research in Biomedicine

CEES0900 Brown Environmental Leadership Lab: Sustainable Devp

CEEC0905 An Introduction to Game Theory

CEBN0900 Brain Basics: From Biology to Behavior

Fees vary by program and course length; 2 Weeks (residential): \$3,540 3-Weeks (residential): \$5,094

<http://brown.edu/ce/pre-college/>

Online Application due: ASAP (classes fill)

Biotechnology Summer Camp at Stony Brook University- *A four week residential camp for students interested in doing research in biotechnology* The of this program is to introduce motivated high school completing 9th and 10th grade 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. Very Competitive!

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

Last year: April 1, 2013

Brookhaven National Labs: Gene Transfer and Genetic Engineering Class

Students will prepare bacterial cells for uptake of foreign DNA (make competent cells); transform bacteria by adding new DNA (genes) into the cell; genetically change bacterium to express a trait that we require; understand why we would want to take a trait from one organism and express it in a different organism; learn about plasmids and antibiotic resistance; learn to use micropipettes and measure volumes in microliters (μL); understand what a control experiment is and why we need to have a control; understand the need for sterile techniques in the laboratory; and understand how genetic engineering benefits science and society. \$450
slc@bnl.gov

Alfred University Summer Institutes: Western NY State The program fee is \$850 (includes a non-refundable \$100 deposit). This covers tuition, supervision, program materials & equipment, recreational activities, room and board from dinner on the first day through lunch on the last day.

- Computer Engineering
- Renewable Energy Engineering (further details coming soon)
- Robotics Engineering

<http://www.alfred.edu/summer/camps/>

Application Deadline: April 2014

The Rockefeller University Summer Neuroscience Program

The Rockefeller Summer Neuroscience Program is a two week program aimed at introducing talented, enthusiastic current ninth and tenth grade students to the brain.

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SUMMER RESEARCH OPPORTUNITIES FOR HIGH SCHOOL STUDENTS AT OTHER INSTITUTIONS

[Black Rock Forest Consortium Field Ecology Research Internship Program](#)

The goal of the two-week, residential summer program is to help current 9th and 10th grade students gain exposure to future careers in the sciences, while learning the skills needed to participate in scientific investigations. Interns will learn about forest ecology and investigative methodologies, from data collection and analysis to the use of technologies for monitoring and measuring biological processes. (*Tuition: \$2000, including room and board. Need-blind acceptance. Financial aid may be available.*)

[Columbia University Institute for Social and Economic Research and Policy](#)

ISERP's summer high school internship program is designed to expose students in the summer between their junior and senior year to the work of social science investigation and research. Interns are matched with ISERP-affiliated faculty and scholars with whom they participate in the current, innovative research taking place at the Institute. (*No information regarding fees. Stipends available to cover local transportation and lunch.*)

[NASA New York City Research Initiative \(Summer Component\)](#)

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). (*No information regarding fees. Please contact to inquire about stipends.*)

[NYU Center for the Study of Asian Health](#)

The Center Student Investigator Program (CSI) provides training and research opportunities for students to gain knowledge and skills to address Asian American health disparities. Through their summer internship experience at CSAAH, students will receive trainings through seminars which aim to provide an understanding of culturally and linguistically appropriate approaches to research, outreach, community partnerships, and care delivery in Asian American populations. (*No information regarding fees/stipends provided.*) *For current 9th and 10th grade students*

[Weill Cornell Summer Academy in Molecular Biology](#)

Each summer, high school students participate in a course in molecular biology on the Graduate School campus. The course, is designed to provide the students hands on experience in biomedical laboratory research techniques. Open to current 9th and 10th grade students.

RESEARCH OPPORTUNITIES FOR HIGH SCHOOL STUDENTS DURING THE SCHOOL YEAR

[Alley Pond Environmental Center Field Biology Internships](#)

The internship programs introduce students to environmental field studies. Students learn how to conduct practical field research through examination of water, soil, and air quality, and biodiversity. (*No fee. No information regarding stipends provided.*)

[American Museum of Natural History Science Research Mentoring Program](#)

The Science Research Mentoring Programs (SRMP) at the American Museum of Natural History are intensive two-year programs for high school students to conduct original scientific research alongside Museum anthropologists, astrophysicists, earth and planetary scientists, and biologists. Each Science Research Mentoring Program includes a summer session where students can hone their skills and explore their research interests. (*No information regarding stipends/fees provided.*)

[Columbia University Science Honors Program](#)

The Columbia University Science Honors Program (SHP) is a highly selective program for students who have a strong interest in science and mathematics. Classes are held at Columbia from 10:00 AM to 12:30 PM on Saturdays throughout the academic year. (*\$20 fee for application processing. No tuition, no stipend.*)

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