

CSH Research Program

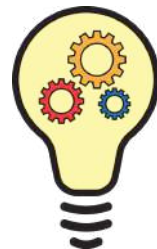


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Agenda for this session:

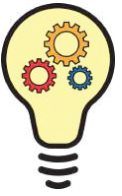


- FAQ's
- What are the learning objectives for the research courses?
- What is the summer research program?
- What is our research program progression?
- Questions?



Foundations of Research Honors

Learning Goals



- Explores social and natural science research
- Evaluate peer-reviewed articles
- Design a social or natural science experiment
- Collect and extract data
- Apply statistical methods to draw conclusions
- Write a research paper
- Effectively communicate
- Participate in competitions



AP Capstone Seminar (10th grade)

Learning Goals



- Collaborate with peers on research
- Present and defend group research
- Read and analyze articles, studies, and other texts
- View an issue from multiple perspectives
- Gather and combine information from sources
- Craft arguments based on evidence



Advanced Science Research II, III Goals



Designed for students who possess a deep committed interest and motivation in pursuing research throughout high school.

- To expose students to real-world problem solving
- To pair students with outside professionals through summer research opportunities and mentorship programs
- To prepare students for local and national competitions.
- To hone in on a research topic



Independent Research Honors Learning Goals



Designed for students who have a clear vision of their research topic and are ready for independent study.

- Students will pursue their research idea with guidance from an outside mentor or teacher.
- Students will present and compete in local, regional and national competitions.
- This course includes advanced statistical analysis of data as well as an extended written literature review of the research topic.



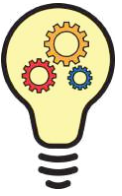
Summer Research Structure



- Open to rising 9th graders through rising 12th graders
- Held at Jr./Sr. High School
- 5 weeks - different topics in the social and natural sciences
- Must complete 60 hours in one summer to obtain 0.5 transcript credit

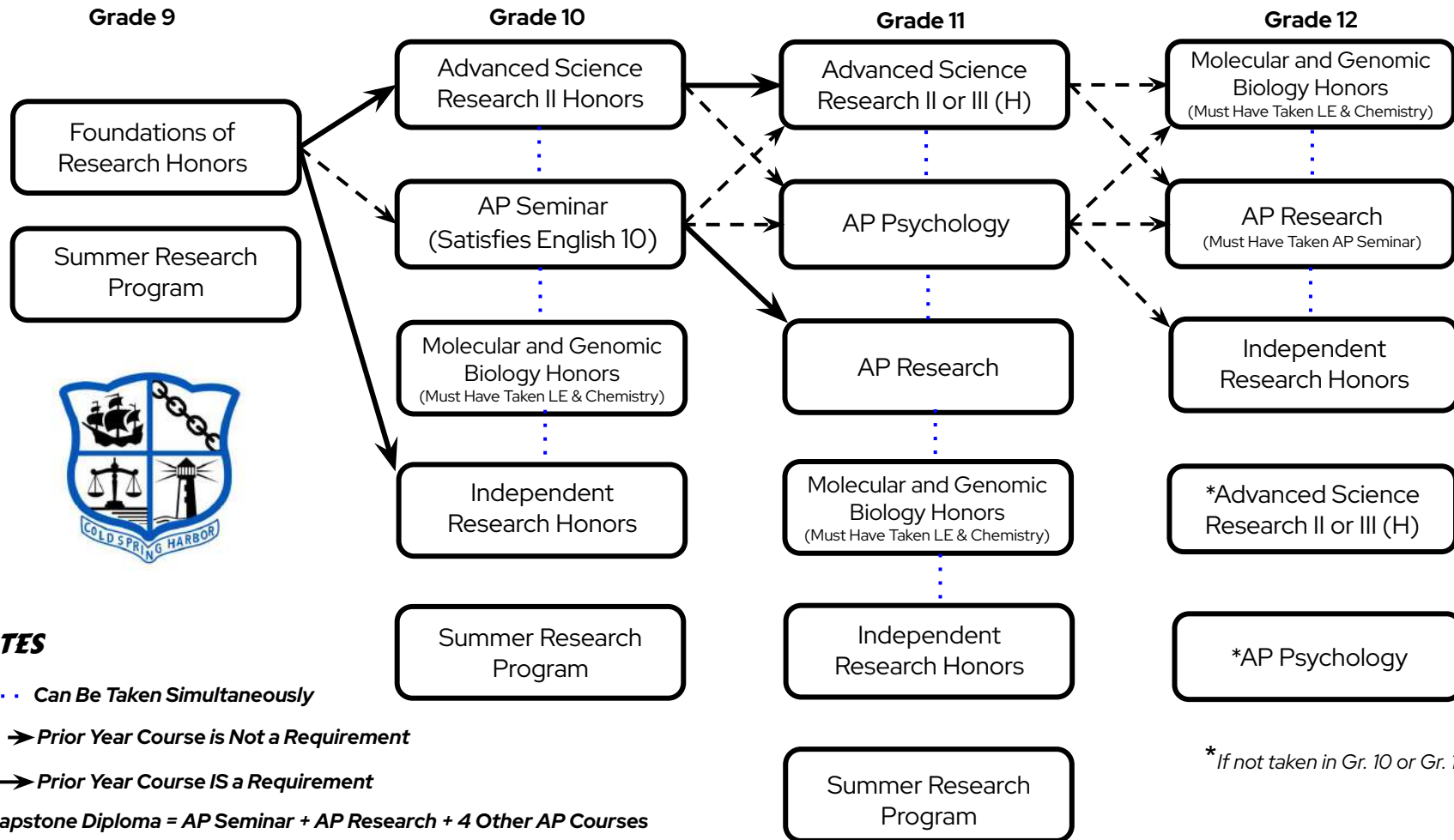


Examples of Summer Research Topics



- The Ins and Outs of Social Science Studies
- Food Computers and the Future of Agriculture
- Experience Engineering Innovation

Cold Spring Harbor Research Program *(Foundations in 9th)*



Cold Spring Harbor Research Program *(Foundations in 10th)*

Grade 9

Summer Research Program



Grade 10

Foundations of Research Honors

AP Seminar
(Satisfies English 10)

Summer Research Program

Grade 11

Advanced Science Research II Honors

AP Research

AP Psychology

Molecular and Genomic Biology Honors
(Must Have Taken LE & Chemistry)

Independent Research Honors

Summer Research Program

Grade 12

Advanced Science Research II or III (H)

AP Psychology

AP Research
(Must Have Taken AP Seminar)

Molecular and Genomic Biology Honors
(Must Have Taken LE & Chemistry)

Independent Research Honors

NOTES

..... Can Be Taken Simultaneously

--> Prior Year Course is Not a Requirement

————> Prior Year Course IS a Requirement

AP Capstone Diploma = AP Seminar + AP Research + 4 Other AP Courses

Scheduling Options (w/ Foundations Taken in 9th)

Research

Grade 9

Option 1

Foundations of Research (H)

Research

Grade 10

Option 1

AP Seminar

Option 2

Adv. Science Research II (H)

Option 3

- AP Seminar
- Adv. Science Research II (H)

Option 4

Molecular & Genomics
Bio. Honors

Option 5

- AP Seminar
- Molecular & Genomics
Bio. Honors

Option 6

Independent Research (H)

Option 7

- AP Seminar
- Independent. Research (H)

Scheduling Options (w/ Foundations Taken in 9th)

Research

Grade II

Option 1

AP Psychology

Option 2

Adv. Sci. Research II or III (H)

Option 3

- AP Psychology
- Adv. Sci. Research II or III (H)

Option 4

AP Research

Option 5

Molecular & Genomics
Bio. Honors

Option 6

- AP Research
- Molecular & Genomics
Bio. Honors

Option 7

Independent Research (H)

Option 8

- AP Research
- Independent Research (H)

Option 9

- AP Psychology
- Molecular & Genomics
Bio. Honors

Option 10

- AP Psychology
- Independent Research (H)

Option 11

- AP Research
- AP Psychology

Scheduling Options (w/ Foundations Taken in 9th)

Research

Grade 12

Option 1

AP Psychology

Option 2

Adv. Sci. Research II or III (H)

Option 3

- AP Psychology
- Adv. Sci. Research II or III (H)

Option 4

AP Research

Option 5

Molecular & Genomics
Bio. Honors

Option 6

- AP Research
- Molecular & Genomics
Bio. Honors

Option 7

Independent Research (H)

Option 8

- AP Research
- Independent Research (H)

Option 9

- AP Psychology
- Molecular & Genomics
Bio. Honors

Option 10

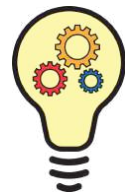
- AP Psychology
- Independent Research (H)

Option 11

- AP Research
- AP Psychology



Examples of Competitions



- Regeneron
- Long Island Science Congress
- Long Island Science and Engineering Fair
- Junior Science and Humanities Symposium
- Toshiba ExploraVision

Past Student Publications

Chen, C., Liu, H., Zabad, S., Rivera, N., Rowin, E., Hassan, M., De Jesus, S., Santos, P., Kravchenko, K., Mikhova, M., Ketterer, S., Shen, A., Shen, S., Navas, E., Horan, B., Raudsepp, J., & Jeffery, C. (2021). MoonProt 3.0: an update of the moonlighting proteins database. *Nucleic Acids Research*, 49(D1), D368-D372. <https://doi.org/10.1093/nar/gkaa1101>.

Garra, G. M., Parmentier, D., & Garra, G. (2021). Physiologic effects and symptoms associated with extended-use medical mask and N95 respirators. *Annals of Work Exposures and Health*, 65(7), 862-867. <https://doi.org/10.1093/annweh/wxab010>.

Levine, H., Baranchuk, N., Li, T., Garra, G., Nagarajan, M. S., & Garg, N. (2022). An emergency medicine physician well-being study focusing on gender differences and years of practice during the COVID-19 pandemic. *The American Journal of Emergency Medicine*, 55, 84-88. <https://doi.org/10.1016/j.ajem.2022.02.055>.

Palatnick, A., Zhou, B., Ghedin, E., & Schatz, M. C. (2020). iGenomics: Comprehensive DNA sequence analysis on your Smartphone. *GigaScience*, 9(12), giaa138. <https://doi.org/10.1093/gigascience/giaa138>.

CSH Research Awards and Achievements

- 1 **Siemens Competition in Math, Science & Technology** national semifinalists
- 1 Third place, 1 Fourth place, 4 Honorable Mentions **Long Island Science and Engineering Fair (LISEF)**
- 13 students **Toshiba ExploraVision** regional honorable mention
- 1 **Young Epidemiological Scholars (YES)** First Place Winner
- 17 students won Highest Honors (First Place), High Honors (Second Place), and Honors (Third Place) at **Long Island Science Congress (LISC)**
- 1 Honorable Mention **New York State Science and Engineering Fair (NYSSEF)**
- 1 Honorable Mention **American Society of Human Genetics**
- 1 student **NASA Summer Research Internship**
- 1 student chosen for **Stony Brook Simons Summer Research program**
- 1 student chosen for **New York University GSTEM Program**
- 36 students chosen for **Cold Spring Harbor Laboratories Partners For the Future program**
- 1 **Newsday** article and 1 **CBS New York News** story
- 4 students received proclamations at **Suffolk County Legislature**
- 4 students received proclamations at **Huntington Town Hall**
- 1 student **Mechanical Division Competition Winner, United States Super STEM Competition**

Research Internship Information



Cold Spring Harbor Laboratory



COLUMBIA UNIVERSITY

IN THE CITY OF NEW YORK



Mount Sinai School of Medicine



Stony Brook University | Simons Summer Research Program



Albert Einstein College of Medicine



THE ROCKEFELLER UNIVERSITY

Science for the benefit of humanity

Brookhaven National Laboratory

Office of Science | U.S. Department of Energy



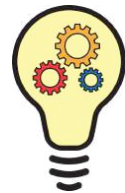
Feinstein Institute
for Medical Research
Northwell Health™



NEW YORK
GENOME CENTER®



Questions?



Thank you for coming this evening!
